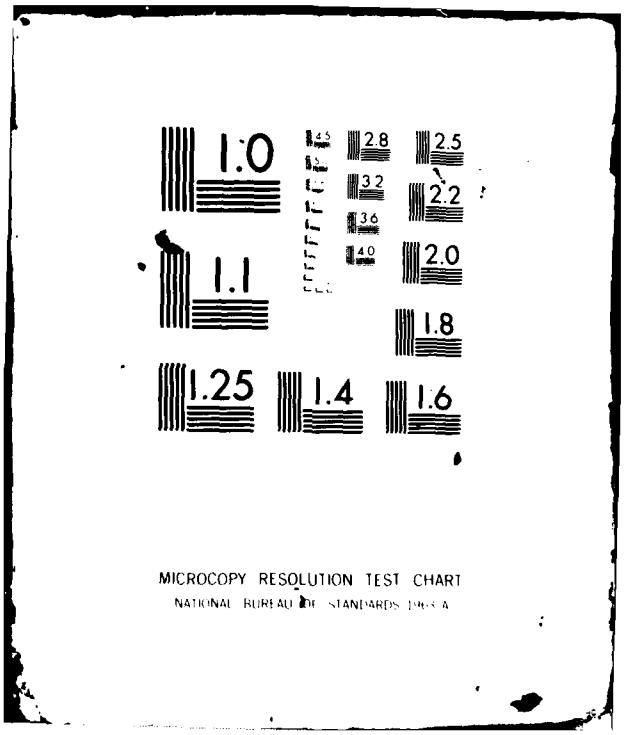
AD-A099 856 NATIONAL AVIATION FACILITIES EXPERIMENTAL CENTER ATL--ETC F/G 1/2
LOS ANGELES INTERNATIONAL AIRPORT DATA PACKAGE NUMBER 2, AIRPOR--ETC(U)
JAN 79

UNCLASSIFIED NL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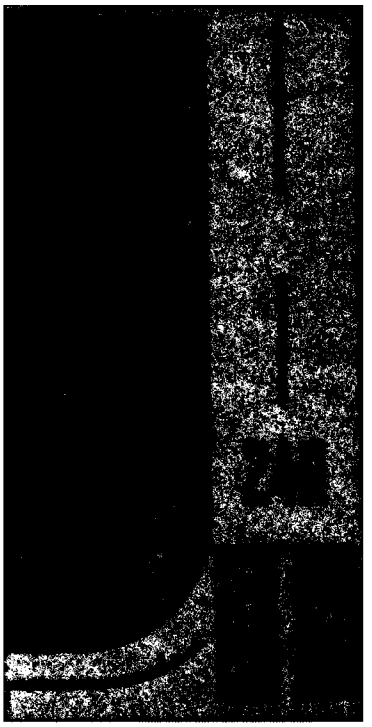
NATIONAL BUREAU OF STANDARDS 1963-A



DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

DATE: December 18, 1978

IN REPLY REFER TO: ANA-220

NATIONAL AVIATION FACILITIES
EXPERIMENTAL CENTER
ATLANTIC CITY, NEW JERSEY 08405

SUBJECT: Los Angeles Simulation Model Calibration Results and Input Data Summary for Stage 1 Experiments

FROM: NAFEC Program Manager, ANA-220

TO: Ray Fowler, AEM-100

Enclosed are data packages for use during the third Task Force meeting on January 22, 1979.

Attachment A presents the results of the Simulation Model Calibration.

Attachment B contains the model input data for Configurations A, B, and C.

Attachment C contains the model input summary for the Los Angeles Stage 1 Experiments.

Attachment D contains preliminary data for the Los Angeles Stage 2 Experiments.

These attachments should be reviewed, revised, and approved by the Los Angeles Task Force prior to use in the model runs.

John R. Vanderveer

JOHN R. VANDERVEER

Enclosure

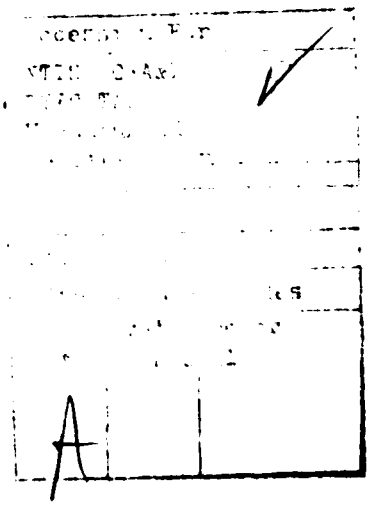


Table of Contents

ATTACHMENT A

SIMULATION MODEL
CALIBRATION OUTPUT DATA

A. FLOW RATES
B. DELAYS
C. TRAVEL TIMES

} SEE HOURLY SUMMARY (TABLE 1) AND QUARTER HOUR FIGURES 1 TO 5

Los Angeles International Airport

Los Angeles
Airport Improvement Task Force Delay Studies

January 1979

Table 1

Hourly Comparison of Output Data
for Simulation Model Calibration

Time	Arrival Flow Rate			Departure Flow Rate		
	Data	Model	(S.D.)	Data	Model	(S.D.)
1800-1900	50	50	(0.48)	51	50	(1.69)
1900-2000	34	34	(0.48)	53	58	(1.14)
2000-2100	39	39	(0.52)	52	49	(1.41)

Time	Average Arrival Air Delay (minutes)			Average Fix to Threshold Travel Time (minutes)		
	Data	Model	(S.D.)	Data	Model	(S.D.)
1800-1900	0.92	1.69	(0.34)	9.33	7.84	(0.36)
1900-2000	1.31	1.04	(0.18)	9.69	9.39	(0.19)
2000-2100	1.12	0.60	(0.05)	9.75	8.72	(0.14)

Time	Average Arrival Threshold to Gate Travel Time (minutes)			Average Departure Gate to Roll Travel Times (minutes)		
	Data	Model	(S. D.)	Data	Model	(S. D.)
1800-1900	3.56	3.46	(0.11)	8.82	10.67	(1.21)
1900-2000	3.96	3.64	(0.15)	10.93	10.61	(1.67)
2000-2100	2.87	3.56	(0.25)	8.63	7.32	(0.40)

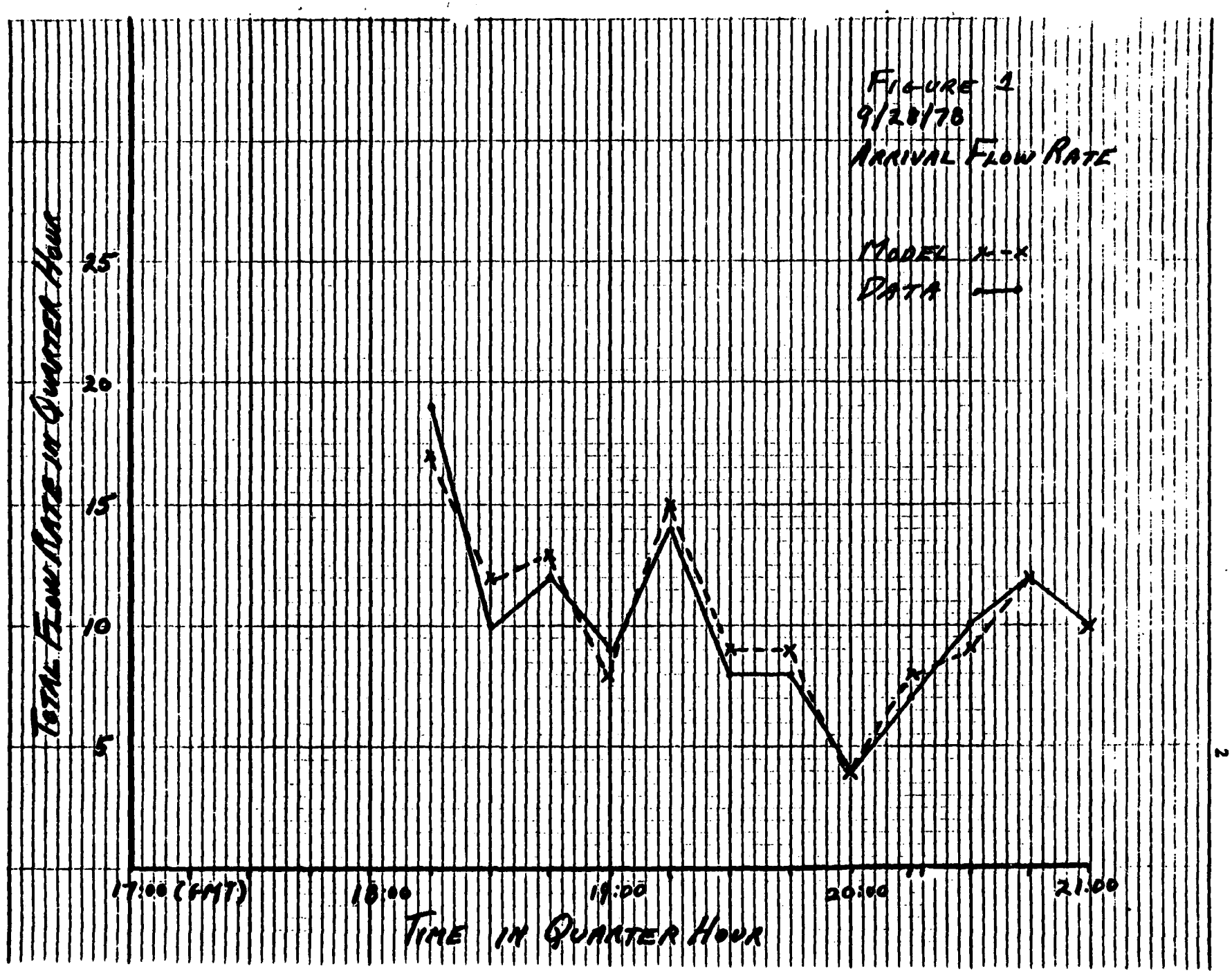


FIGURE 1
9/28/78
ARRIVAL FLOW RATE
MODEL
DATA
TOTAL FLOW RATE IN QUARTER HOUR
25
20
15
10
5
17:00 (GMT)
18:00
19:00
20:00
21:00
TIME IN QUARTER HOUR

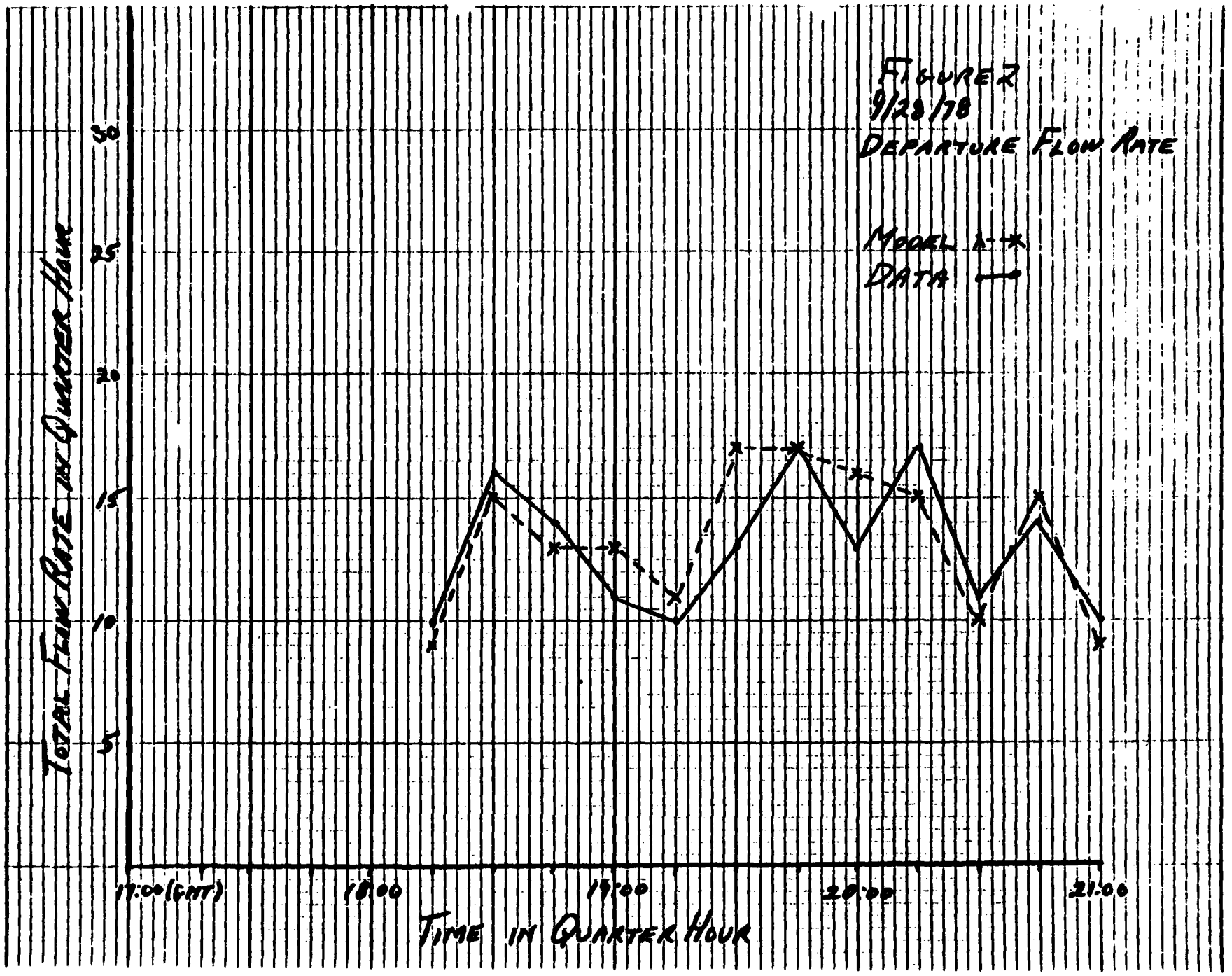


FIGURE 3
9/28/78
DEPARTURE FLOW RATE
MODEL
DATA
TOTAL FLOW RATE IN QUARTER HOUR
30
25
20
15
10
5
17:00 (EDT)
18:00
19:00
20:00
21:00
TIME IN QUARTER HOUR

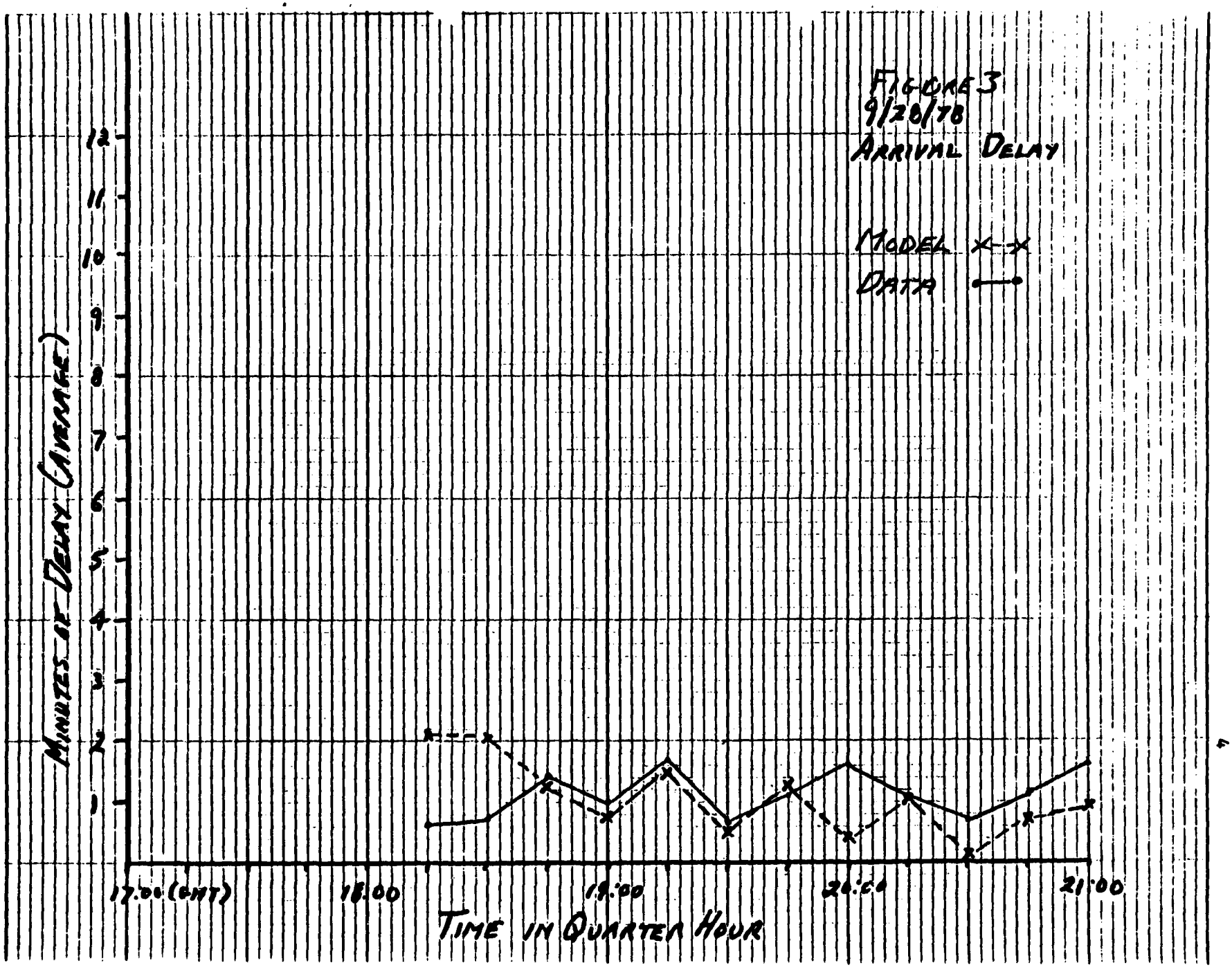


FIGURE 3
9/20/78
ARRIVAL DELAY
MODEL X-X
DATA
MINUTES OF DELAY (AVERAGE)
12
11
10
9
8
7
6
5
4
3
2
1
17.00 (GMT)
18.00
19.00
20.00
21.00
TIME IN QUARTER HOUR

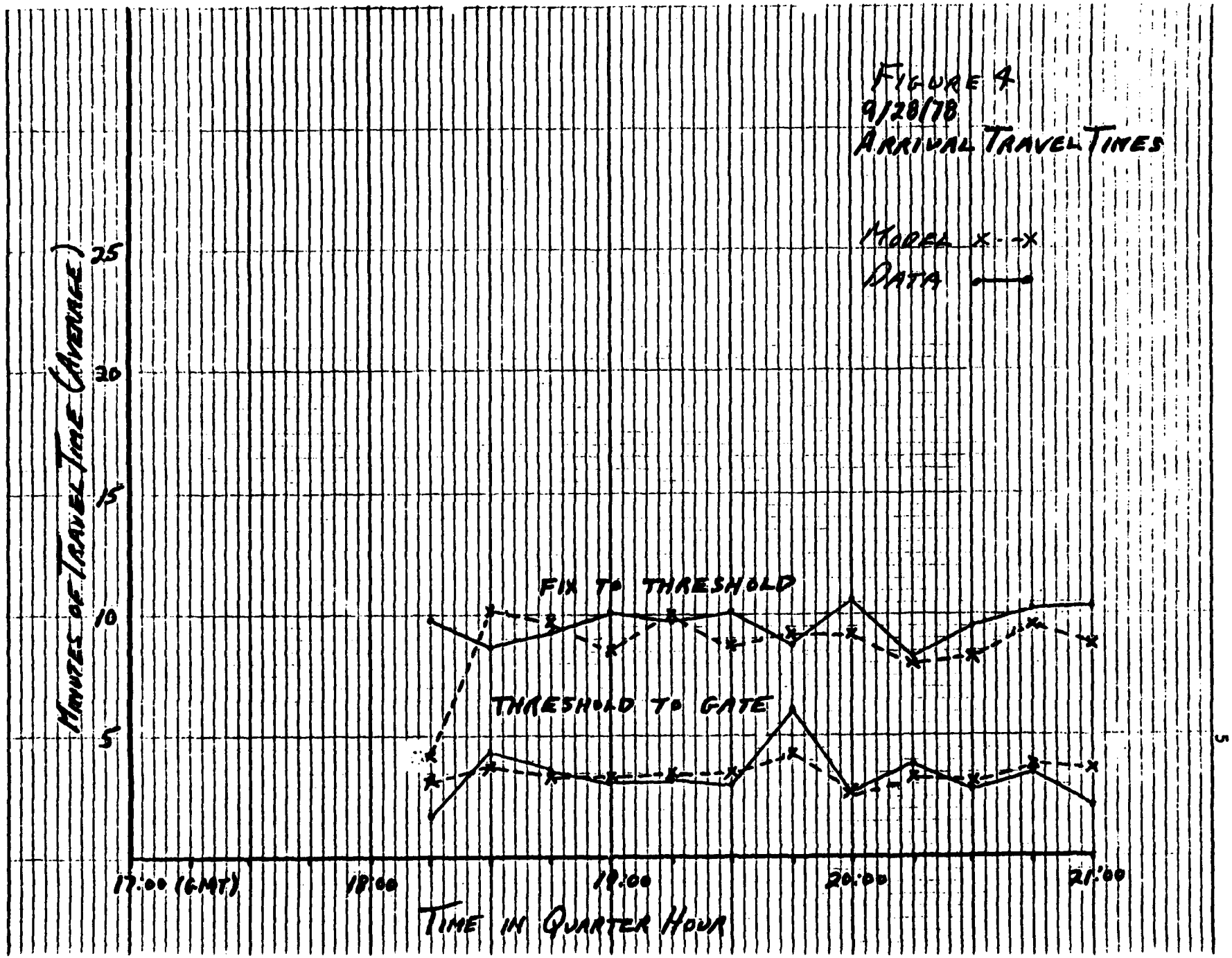


FIGURE 4
9/28/78
ARRIVAL TRAVEL TIMES
MODEL
DATA
MINUTES OF TRAVEL TIME (AVERAGE)
25
30
15
10
5
FIX TO THRESHOLD
THRESHOLD TO GATE
17:00 (GMT)
18:00
19:00
20:00
21:00
TIME IN QUARTER HOUR

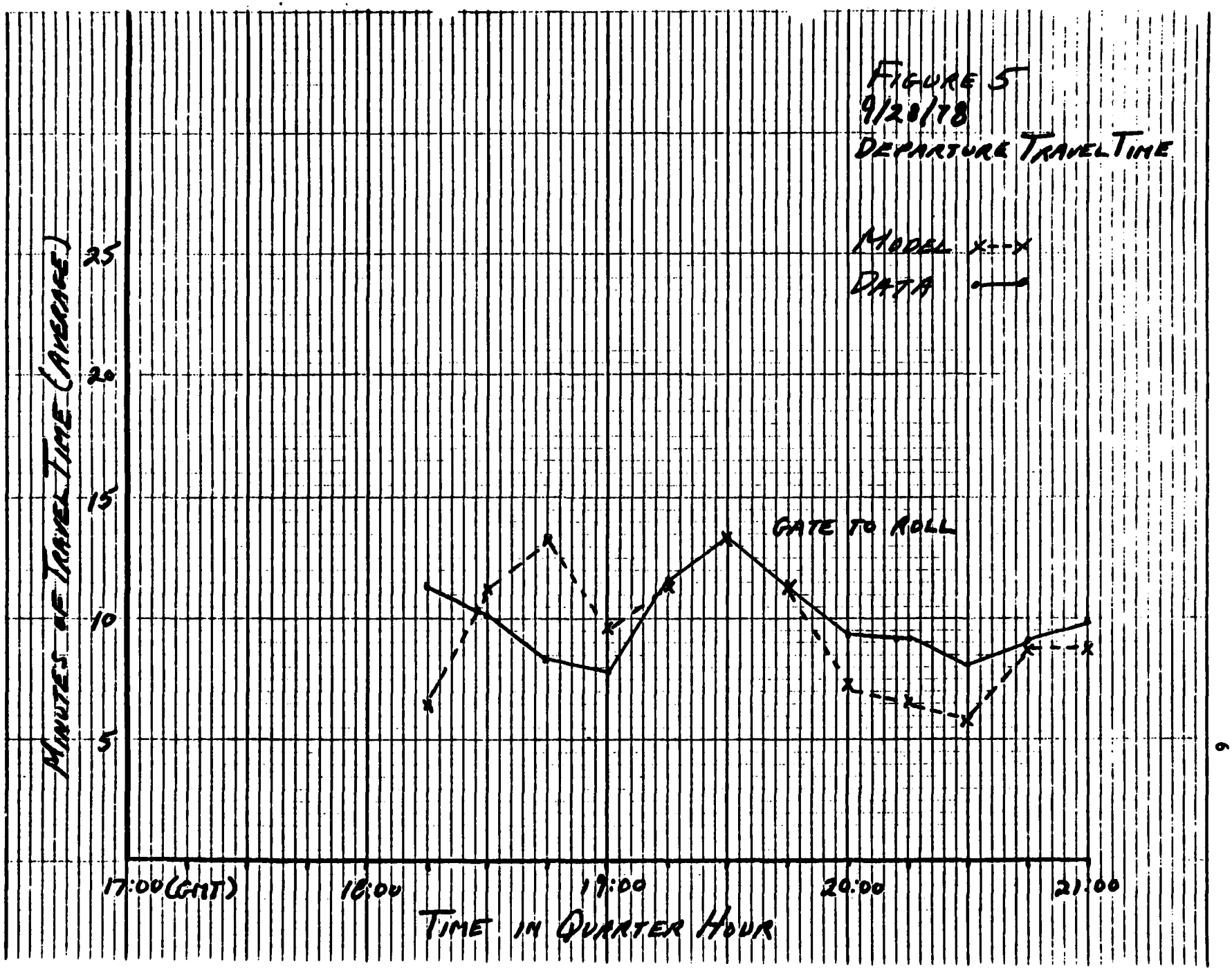


FIGURE 5
9/28/78
DEPARTURE TRAVEL TIME
MODEL x--x
DATA
GATE TO ROLL
MINUTES OF TRAVEL TIME (AVERAGE)
25
20
15
10
5
17:00 (GMT)
18:00
19:00
20:00
21:00
TIME IN QUARTER HOUR

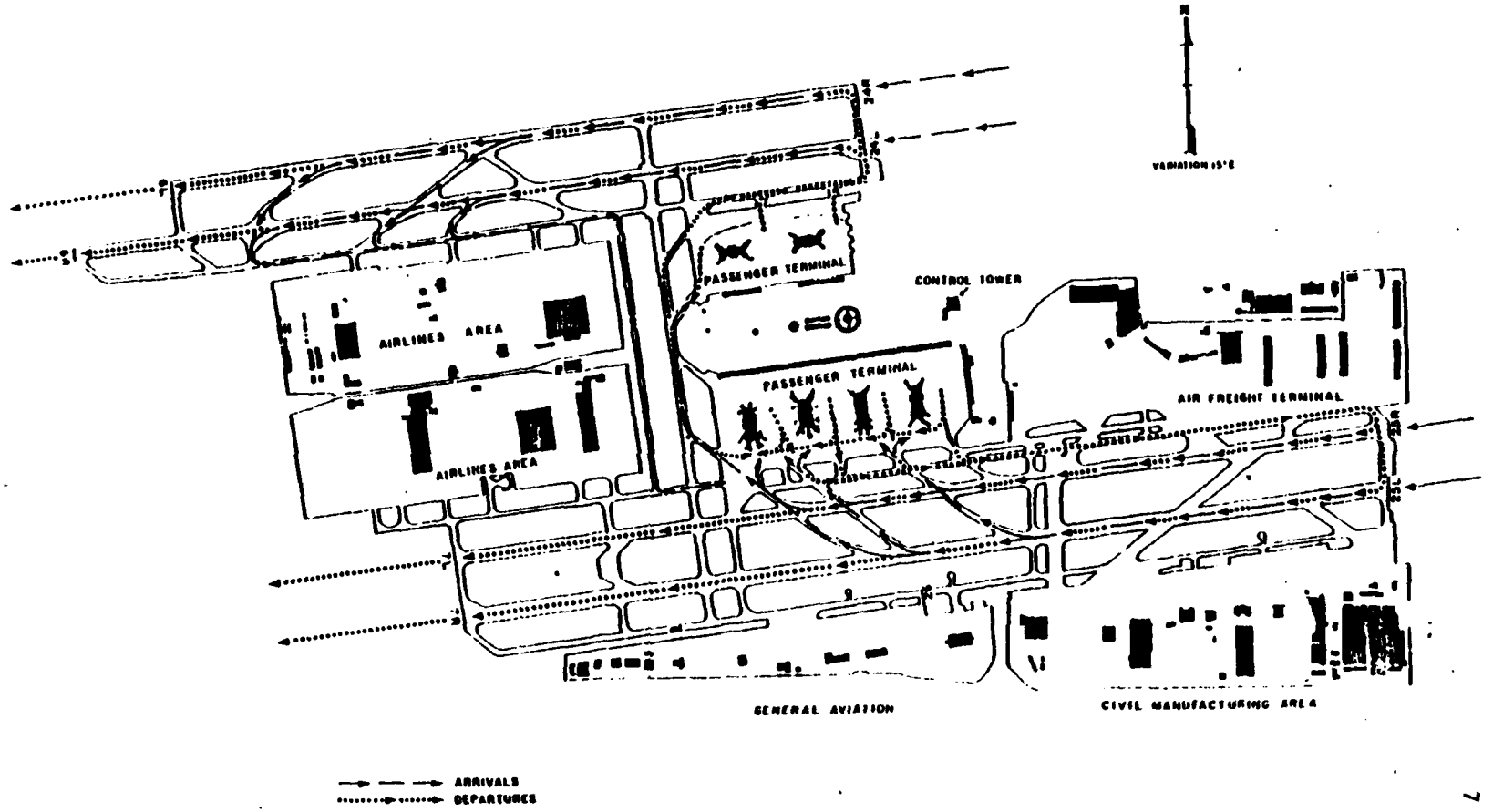
ATTACHMENT B

Configurations A, B, and C
Model Input Data

Los Angeles International Airport

Los Angeles
Airport Improvement Task Force Delay Studies

January 1979



Configuration A
Figure 6 ARRIVAL/DEPARTURE TAXI ROUTES

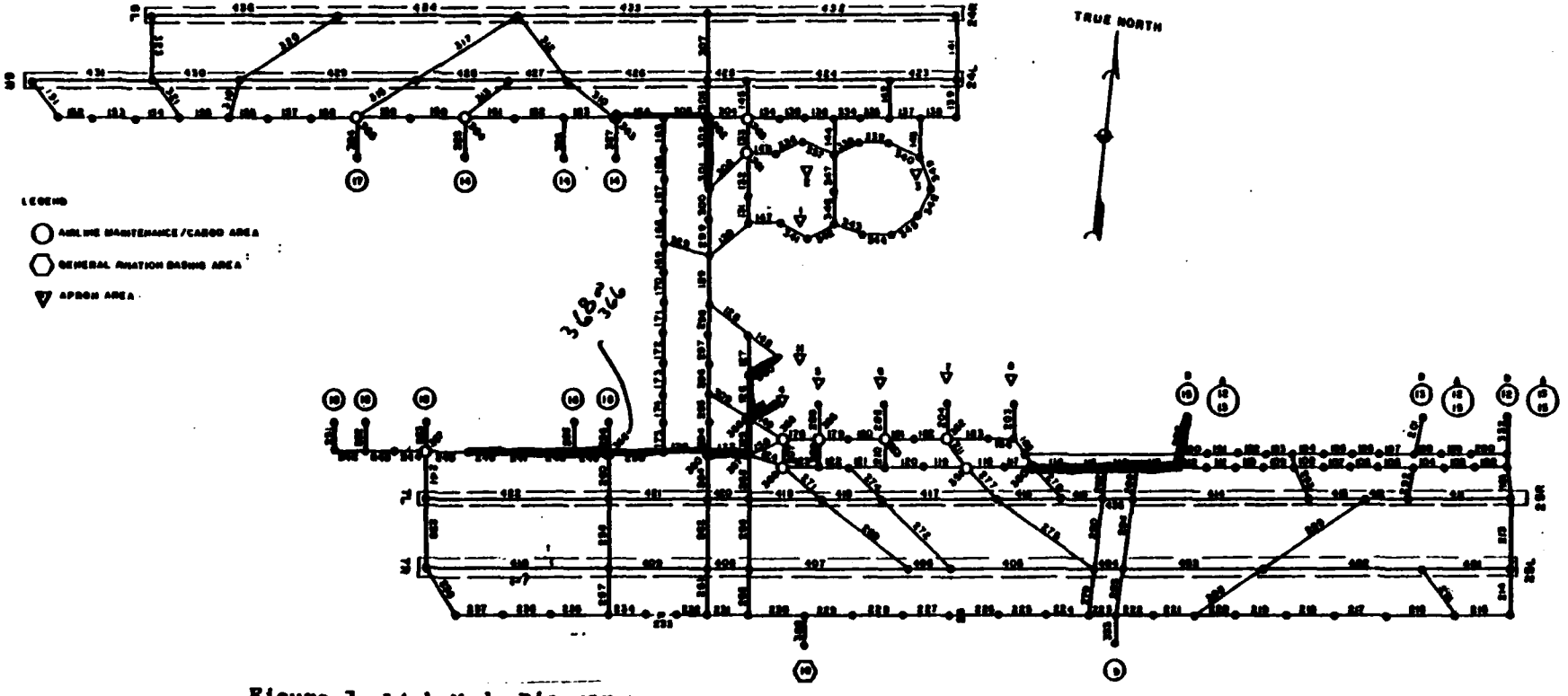


Figure 7 Link-Node Diagram

INPUT DATA

LOS ANGELES INTERNATIONAL AIRPORT SIMULATION MODEL CALIBRATION RUN

NUMBER OF RANDOM NUMBER SEEDS
10

RANDOM NUMBER SEEDS
82651 91921 69011 92157 14577 10493 27011 40961 15011 63661

START TIME AND FINISH TIME
18% 0 21% 5

PRINT OPTIONS
F F F F F

NUMBER OF AIRLINES
19

AIRLINE CODES
I1 I2 I3 C1 PS TI TW UA WA AA
AR A2 A1 I4 CO NW EA FT GA

NUMBER OF RUNWAYS
4

RUNWAY NAMES
24R 24L 25R 25L

RUNWAY END LINK NUMBERS
432 423 411 401

RUNWAY CROSSING LINKS--CLEARANCE TIMES FOR A/C CROSSING ACTIVE RUNWAY

XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
307	2	25. 25. 33.	35. 22. 22.	23. 26. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
312	2	42. 42. 46.	35. 31. 31.	33. 42. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
317	2	52. 52. 46.	35. 36. 36.	36. 42. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
320	2	56. 54. 46.	35. 43. 43.	42. 42. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
323	2	56. 54. 46.	35. 46. 46.	42. 42. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
284	3	38. 38. 47.	45. 29. 29.	31. 42. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
275	3	51. 51. 60.	45. 35. 35.	37. 42. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
272	3	52. 96. 72.	45. 42. 42.	42. 42. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
269	3	52. 96. 72.	45. 43. 43.	42. 42. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
266	3	52. 96. 72.	45. 45. 45.	42. 42. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
262	3	67. 62. 60.	52. 46. 46.	42. 42. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
258	4	67. 62. 60.	52. 47. 47.	42. 42. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
265	4	67. 62. 60.	52. 44. 44.	42. 42. 20. 20. 20. 20.
XNG LINK	RUNWAY	ARRIVAL ON R/W	DEPARTURE ON R/W	ARRIVAL ON FINAL
283	4	38. 38. 47.	52. 29. 29.	31. 42. 20. 20. 20. 20.

RUNWAY CROSSING TIME AND INTERARRIVAL GAP

LINK	DELAY	MEAN	STD DEV
307	5.00	1.50	.50
312	5.00	1.50	.50
317	5.00	1.60	.50
320	5.00	1.50	.50
323	5.00	1.50	.50
284	5.00	1.50	.50
275	5.00	1.50	.50
272	5.00	1.50	.50
269	5.00	1.50	.50
266	5.00	1.50	.50
282	5.00	1.60	.50
258	5.00	1.50	.50
265	5.00	1.50	.50
283	5.00	1.60	.50

NUMBER OF EXITS

21

DISTANCE IN FEET FROM THRESHOLD TO THE EXIT TAXIWAY (EXIT LINK NO. VERSUS DISTANCE)

307	2500.0	312	4500.0	317	4501.0	320	6400.0	323	8290.0
145	2200.0	305	2600.0	310	4000.0	313	4600.0	315	5500.0
318	7500.0	277	5350.0	274	6500.0	271	7550.0	268	7820.0
284	3000.0	275	4200.0	272	5700.0	269	6150.0	266	7780.0
262	8260.0								

NUMBER OF HOLDING AREAS

1

HOLDING AREA NUMBERS

99

NUMBER OF D/A BASING AREAS

1

D/A BASING AREA NUMBERS

9

AIRLINE GATES

I1	1	2
I2	3	
I3	10	
C1	11	
PS	2	
TI	8	
TW	2	
UA	7	8
NA	5	6
AA	4	
AR	1	
A2	6	
AI	5	
I4	1	3
CO	7	
NW	4	
EA	2	
FT	12	
GA	9	

TRUNCATION LIMITS
UPPER LIMIT = 3100
LOWER LIMIT = 3100

DEPARTURE QUEUE LENGTH AND INTERARRIVAL GAP
QUEUE = 5 MEAN = 2.00 STD DEV = 0.00

LENGTHS OF COMMON APPROACH PATHS FROM OUTER MARKER , THRESHOLD IN NAUTICAL MILES (RUNWA .. A/C CLASS. LENGTH)

1	1	0.00
1	2	0.00
1	3	2.00
1	4	2.00
2	1	0.00
2	2	0.00
2	3	2.00
2	4	2.00
3	1	0.00
3	2	0.00
3	3	2.00
3	4	2.00
4	1	0.00
4	2	0.00
4	3	2.00
4	4	2.00

TAXIWAY PATH DATA
THIS AIRPORT USES THE FOLLOWINGS
LINKSS 266 PATHSS 540 PATH SEGMENTSS 13469
AVERAGE PATH LENGTH IS 24.91 SEGMENTS

TAXIWAY TWO-WAY PATHS

```
LINKS  2
     353     205
LINKS  2
     352     204
LINKS  7
     340     339     330     337     336     146     361
LINKS  7
     361     146     336     337     338     339     340
LINKS  6
     331     358     125     357
LINKS  4
     357     125     359     331
LINKS  3
     206     355     208
LINKS  3
     208     356     206
LINKS  3
     205     353     210
LINKS  3
     210     353     205
LINKS  4
     204     352     211     351
LINKS  4
     351     211     352     204
LINKS  3
     203     105     350
LINKS  3
     350     105     203
LINKS  9
     333     223     224     225     226     227     228     229     230
LINKS  9
     230     229     228     227     226     225     224     223     333
LINKS  5
     330     126     359     126     357
LINKS  5
     357     125     359     126     330
LINKS  6
     202     113     114     115     116     350
LINKS  6
     350     116     115     114     113     202
LINKS  3
     357     177     360
LINKS  3
     360     177     357
LINKS  4
     357     177     360     176
LINKS  4
     176     360     177     357
LINKS  6
     357     177     360     176     250     366
LINKS  6
     366     250     176     360     177     357
LINKS 12
     357     177     360     176     250     366     249     248     247     246
     245     362
LINKS 12
     367     245     246     247     248     249     360     250     176     360
     177     357
LINKS  4
     114     115     116     350
```

```
LINKS  5
    350     116     115     114     113
LINKS  4
    368     309     362     303
LINKS  4
    303     362     304     368
LINKS  6
    368     309     362     303     164     363
LINKS  6
    363     169     303     362     304     368
LINKS 10
    368     309     362     303     164     363     163     162     161     364
LINKS 10
    364     161     162     163     363     164     303     362     304     368
LINKS 14
    360     309     362     303     164     363     163     162     161     364
    160     159     365     324
LINKS 14
    324     365     159     160     364     161     162     163     363     164
    303     362     304     360
```

A/C SEPARATIONS
128 SEPARATION VALUES IN 4 SETS OF 32, ARRIVAL / ARRIVAL, DEPARTURE / ARRIVAL, DEPARTURE / DEPARTURE AND ARRIVAL / DEPARTURE
EACH SET OF 32 IS COMPOSED OF 16 PAIRS OF MEAN AND STANDARD DEVIATION
THE 16 SETS ARE POSSIBLE WAYS OF A/C CLASS X FOLLOWED BY A/C CLASS Y
THERE ARE 4 A/C CLASSES -- 1) D CLASS
2) C CLASS
3) B CLASS
4) A CLASS
THE ORDER OF SETS OF (X,Y) IS)
(1,1), (1,2), (1,3), (1,4), (2,1), (2,2), (2,3), (2,4)
(3,1), (3,2), (3,3), (3,4), (4,1), (4,2), (4,3), (4,4)

LEAD A/C RUNWAY 0 LEAD A/C FIX 0 TRAIL A/C RUNWAY 0 TRAIL A/C FIX 0
128 SEPARATION VALUES IN 4 SETS OF 32, A/A (N.MILES), D/A (N.MILES), D/D (MINUTES) AND A/D (MINUTES)

3.06	.70	4.67	.65	5.49	.60	5.41	.55
3.06	.70	2.97	.65	3.69	.60	3.61	.55
3.06	.70	2.97	.65	2.89	.60	2.81	.55
3.06	.70	2.97	.65	2.89	.60	2.81	.55
1.51	.26	1.41	.25	1.38	.24	1.38	.24
1.51	.26	1.41	.25	1.38	.24	1.38	.24
1.32	.25	1.23	.24	1.13	.23	1.13	.23
1.32	.25	1.23	.24	1.13	.23	1.13	.23
1.90	.08	2.40	.08	2.40	.08	2.40	.08
1.40	.08	1.40	.08	1.23	.08	1.23	.08
1.23	.08	1.15	.08	.98	.08	.98	.08
1.23	.08	1.15	.08	.98	.08	.98	.08
.88	.16	.78	.19	.97	.23	.74	.09
.88	.16	.78	.19	.97	.23	.74	.09
.88	.16	.78	.19	.97	.23	.74	.09
.88	.16	.78	.19	.97	.23	.74	.09

LEAD A/C RUNWAY 1 LEAD A/C FIX 0 TRAIL A/C RUNWAY 2 TRAIL A/C FIX 0
128 SEPARATION VALUES IN 4 SETS OF 32, A/A (N.MILES), D/A (N.MILES), D/D (MINUTES) AND A/D (MINUTES)

2.89	.70	3.58	.65	4.12	.60	4.06	.55
2.29	.70	2.23	.65	2.77	.60	2.71	.55
2.29	.70	2.23	.65	2.17	.60	2.11	.55
2.29	.70	2.23	.65	2.17	.60	2.11	.55
.60	.26	.56	.25	.52	.24	.52	.24
.60	.26	.56	.25	.52	.24	.52	.24
.53	.25	.49	.24	.45	.23	.45	.23
.53	.25	.49	.24	.45	.23	.45	.23
1.90	.08	2.40	.08	2.40	.08	2.40	.08
1.40	.08	1.40	.08	1.23	.08	1.23	.08
1.23	.08	1.15	.08	.98	.08	.98	.08
1.23	.08	1.15	.08	.98	.08	.98	.08
.55	.16	.43	.11	.37	.11	.38	.10
.55	.16	.43	.11	.37	.11	.38	.10
.55	.16	.43	.11	.37	.11	.38	.10
.55	.16	.43	.11	.37	.11	.38	.10

LEAD A/C RUNWAY 3 LEAD A/C FIX 0 TRAIL A. RUNWAY 4 TRAIL A/C FIX 0
128 SEPARATION VALUES IN 4 SETS OF 32, A/A (N.MILES), D/A (N.MILES), D/D (MINUTES) AND A/D (MINUTES)

2.89	.70	3.58	.65	4.12	.60	4.06	.55
2.29	.70	2.23	.65	2.77	.60	2.71	.55
2.29	.70	2.23	.65	2.17	.60	2.11	.55
2.29	.70	2.23	.65	2.17	.60	2.11	.55
.60	.26	.56	.25	.52	.24	.52	.24
.60	.26	.56	.25	.52	.24	.52	.24
.53	.25	.49	.24	.45	.23	.45	.23
.53	.25	.49	.24	.45	.23	.45	.23
1.90	.08	2.48	.08	2.40	.08	2.48	.08
1.40	.08	1.48	.08	1.23	.08	1.23	.08
1.23	.08	1.15	.08	.98	.08	.98	.08
1.23	.08	1.15	.08	.98	.08	.98	.08
.48	.18	.49	.18	.49	.18	.46	.09
.48	.18	.49	.18	.49	.18	.46	.09
.48	.18	.49	.18	.49	.18	.46	.09
.48	.18	.49	.18	.49	.18	.46	.09

LEAD A/C RUNWAY 2 LEAD A/C FIX 0 TRAIL A/C RUNWAY 1 TRAIL A/C FIX 0
128 SEPARATION VALUES IN 4 SETS OF 32, A/A (N.MILES), D/A (N.MILES), D/D (MINUTES) AND A/D (MINUTES)

2.89	.70	3.58	.65	4.12	.60	4.06	.55
2.29	.70	2.23	.65	2.77	.60	2.71	.55
2.29	.70	2.23	.65	2.17	.60	2.11	.55
2.29	.70	2.23	.65	2.17	.60	2.11	.55
.60	.26	.56	.25	.52	.24	.52	.24
.60	.26	.56	.25	.52	.24	.52	.24
.53	.25	.49	.24	.45	.23	.45	.23
.53	.25	.49	.24	.45	.23	.45	.23
1.90	.08	2.48	.08	2.40	.08	2.48	.08
1.40	.08	1.48	.08	1.23	.08	1.23	.08
1.23	.08	1.15	.08	.98	.08	.98	.08
1.23	.08	1.15	.08	.98	.08	.98	.08
.57	.18	.58	.19	.43	.14	.42	.09
.57	.18	.58	.19	.43	.14	.42	.09
.57	.18	.58	.19	.43	.14	.42	.09
.57	.18	.58	.19	.43	.14	.42	.09

LEAD A/C RUNWAY 4 LEAD A/C FIX 0 TRAIL A/C RUNWAY 3 TRAIL A/C FIX 0
128 SEPARATION VALUES IN 4 SETS OF 32, A/A (N.MILES), D/A (N.MILES), D/D (MINUTES) AND A/D (MINUTES)

2.89	.70	3.58	.65	4.12	.60	4.06	.55
2.29	.70	2.23	.65	2.77	.60	2.71	.55
2.29	.70	2.23	.65	2.17	.60	2.11	.55
2.29	.70	2.23	.65	2.17	.60	2.11	.55
.60	.26	.56	.25	.52	.24	.52	.24
.60	.26	.56	.25	.52	.24	.52	.24
.53	.25	.49	.24	.45	.23	.45	.23
.53	.25	.49	.24	.45	.23	.45	.23
1.90	.08	2.48	.08	2.40	.08	2.48	.08
1.40	.08	1.48	.08	1.23	.08	1.23	.08
1.23	.08	1.15	.08	.98	.08	.98	.08
1.23	.08	1.15	.08	.98	.08	.98	.08
.55	.06	.51	.14	.63	.13	.48	.09
.55	.06	.51	.14	.63	.13	.48	.09
.55	.06	.51	.14	.63	.13	.48	.09
.55	.06	.51	.14	.63	.13	.48	.09
1	1.90	.08					
2	1.40	.08					
3	1.23	.08					
4	1.23	.08					

VECTORING DELAY INPUTS

FIX	DELAY EVALUATION LEVEL	HOLDING PCT.	MAXIMUM VECTORING DELAY	MINIMUM HOLDING DELAY
1	10.00	100.00	10.00	0.00
2	10.00	100.00	10.00	0.00
3	10.00	100.00	10.00	0.00
4	10.00	100.00	10.00	0.00
5	10.00	100.00	10.00	0.00
6	10.00	100.00	10.00	0.00
7	10.00	100.00	10.00	0.00
8	10.00	100.00	10.00	0.00
10	10.00	100.00		

TAKE-OFF QUEUE SWITCH FOR RUNWAY 1 = 99

TAKE-OFF QUEUE SWITCH FOR RUNWAY 2 = 99

TAKE-OFF QUEUE SWITCH FOR RUNWAY 3 = 99

TAKE-OFF QUEUE SWITCH FOR RUNWAY 4 = 99

TAKE-OFF QUEUE SWITCH FOR RUNWAY 5 = 0

GATE HOLD LIMIT = 9 HOLD TIME = 2.00

GATE HOLD LIMIT = 9 HOLD TIME = 2.00

GATE HOLD LIMIT = 9 HOLD TIME = 2.00

GATE HOLD LIMIT = 9 HOLD TIME = 2.00

AIRSPACE DELAYS

FIX	OCCURENCE PERCENTAGE	HOLD MEAN	HOLD SIGMA

A/C DEPARTURE RUNWAY OCCUPANCY TIME IN SECONDS (A/C CLASS, MEAN, AND STD. DEV.)

1	39.00	4.00
2	39.00	4.00
3	34.00	4.00
4	34.00	4.00

TOUCH-AND-GO RUNWAY OCCUPANCY TIME IN SECONDS (A/C CLASS, MEAN, AND STD. DEV.)

1	0.00	0.00
2	0.00	0.00
3	0.00	0.00
4	0.00	0.00

GATE SERVICE TIME DISTRIBUTION (PROBABILITY VS TIME)

CLASS 1

0.00

CLASS 2

0.00

CLASS 3

0.00

CLASS 4

0.00

A/C APPROACH SPEED IN KNOTS (A/C CLASS, MEAN, STD. DEV.)

1	140.00	5.00
2	130.00	5.00
3	120.00	5.00
4	110.00	5.00

RUNWAY EXIT SELECTION--USAGE PERCENTAGE BY EACH A. CLASS AND BY EACH RUNWAY (EXIT LINK VERSUS PROBABILITY)

CLASS 1 RWY 1
307. .07 320. .93 323. 1.00
CLASS 2 RWY 1
307. .27 312. .35 317. .67 320. .97 323. 1.00

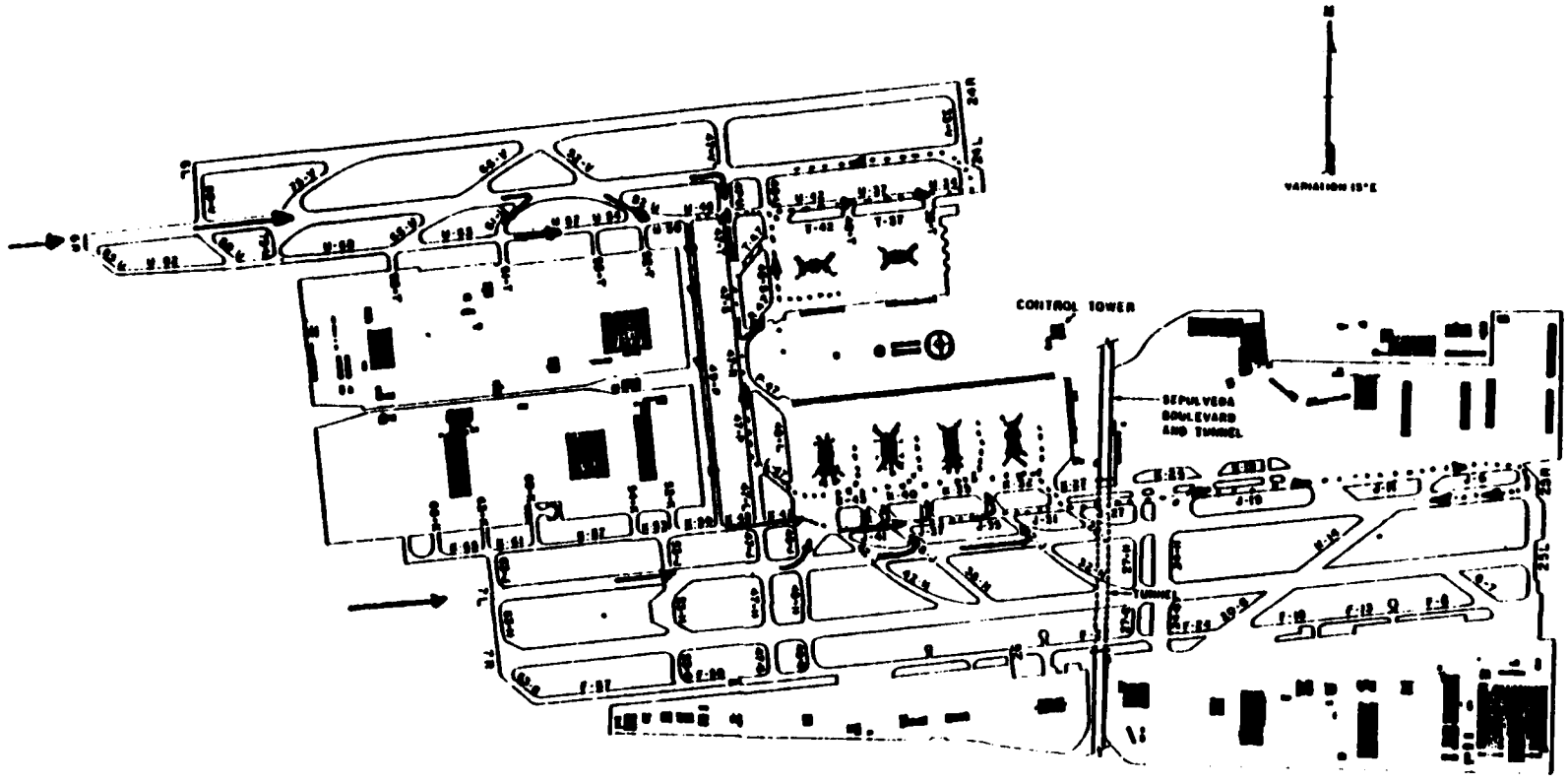
CLASS 3 RWY 1
307. .78 312. .80 317. 1.00
CLASS 4 RWY 1
307. .86 317. 1.00
CLASS 1 RWY 2
310. .07 313. .20 315. .53 318. 1.00
CLASS 2 RWY 2
145. .02 305. .26 310. .34 313. .37 315. .67
318. 1.00
CLASS 3 RWY 2
145. .33 305. .83 310. .90 313. .94 315. .97
318. 1.00
CLASS 4 RWY 2
145. .99 305. 1.00
CLASS 1 RWY 3
274. .99 271. 1.00
CLASS 2 RWY 3
277. .46 274. .81 271. 1.00
CLASS 3 RWY 3
277. .45 274. .80 271. .80 268. 1.00
CLASS 4 RWY 3
277. .99 271. 1.00
CLASS 1 RWY 4
275. .08 272. .31 269. .86 262. 1.00
CLASS 2 RWY 4
275. .09 272. .46 269. .85 262. 1.00
CLASS 3 RWY 4
275. .19 272. .25 269. .29 262. .45 284. 1.00

CLASS 4 RWY 4
275. .22 272. .89 269. .50 284. 1.00

THE ARRIVAL RUNWAY OCCUPANCY TIME IN SECONDS BY A/C CLASS (DISTANCE IN FEET FROM THRESHOLD TO EXIT TAXIWAY VERSUS TIME)
CLASS 1
4000.0 37.00 4200.0 47.00 4501.0 64.40 5500.0 45.70 5700.0 43.00
6150.0 42.00 6400.0 51.90 6500.0 49.20 7500.0 55.80 7550.0 53.60
7700.0 64.20
CLASS 2
2200.0 34.50 2500.0 37.80 3000.0 52.00 4280.0 40.60 4500.0 52.70
4501.0 46.80 5350.0 42.40 5500.0 38.50 5700.0 42.80 6150.0 46.80
6400.0 48.20 6500.0 49.20 7550.0 51.60 7780.0 54.00 7820.0 59.00
8250.0 58.80
CLASS 3
2200.0 31.60 2500.0 36.90 2600.0 35.00 3000.0 42.70 4000.0 33.80
4280.0 59.30 4500.0 48.10 4501.0 38.00 4600.0 46.00 5350.0 50.30
5700.0 60.00 7550.0 63.30 7780.0 86.00
CLASS 4
2000.0 35.00 2500.0 32.40 4280.0 38.50 4500.0 45.00 5350.0 44.50
6700.0 52.00 7780.0 50.00

TAXIING SPEEDS IN MPH
5.00 10.00 15.00 20.00 25.00 35.00

A/C LATENESS DISTRIBUTION IN MINUTES (RANDOM NUMBER VERSUS TIME)



Configuration B
Figure 8

01/11/79

RWY NAMES

06R 07L 24L 25R

RWY END LINKS

151 422 423 411

TAXIWAY TWO-WAY

LOS ANGELES CONFIGURATION B

002

359 331

002

331 359

002

355 206

002

206 355

002

353 205

002

205 353

002

352 204

002

204 352

002

361 196

002

196 361

003

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206 355 208
003
208 356 206
003
205 353 210
003
210 353 205
004
204 352 211 351
004
351 211 352 204
003
203 185 350
003
350 185 203
005
113 114 115 116 350
005
350 116 115 114 113
006
202 113 114 115 116 350
006
350 116 115 114 113 202
005
330 126 359 125 357
005
357 125 359 126 330

```
004
331   359   125   357
004
357   125   359   331
002
361   146
002
146   361
007
361   146   336   337   338   339   340
007
340   339   338   337   336   146   361
002
366   250
002
250   366
006
366   250   176   360   177   357
006
357   177   360   176   250   366
RWY EXIT SELECTION
  1     1     3
310   0.30   305   0.80   145   0.30
  2     1     3
310   0.54   305   0.37   145   0.09
  3     1     3
310   0.54   305   0.37   145   0.09
```

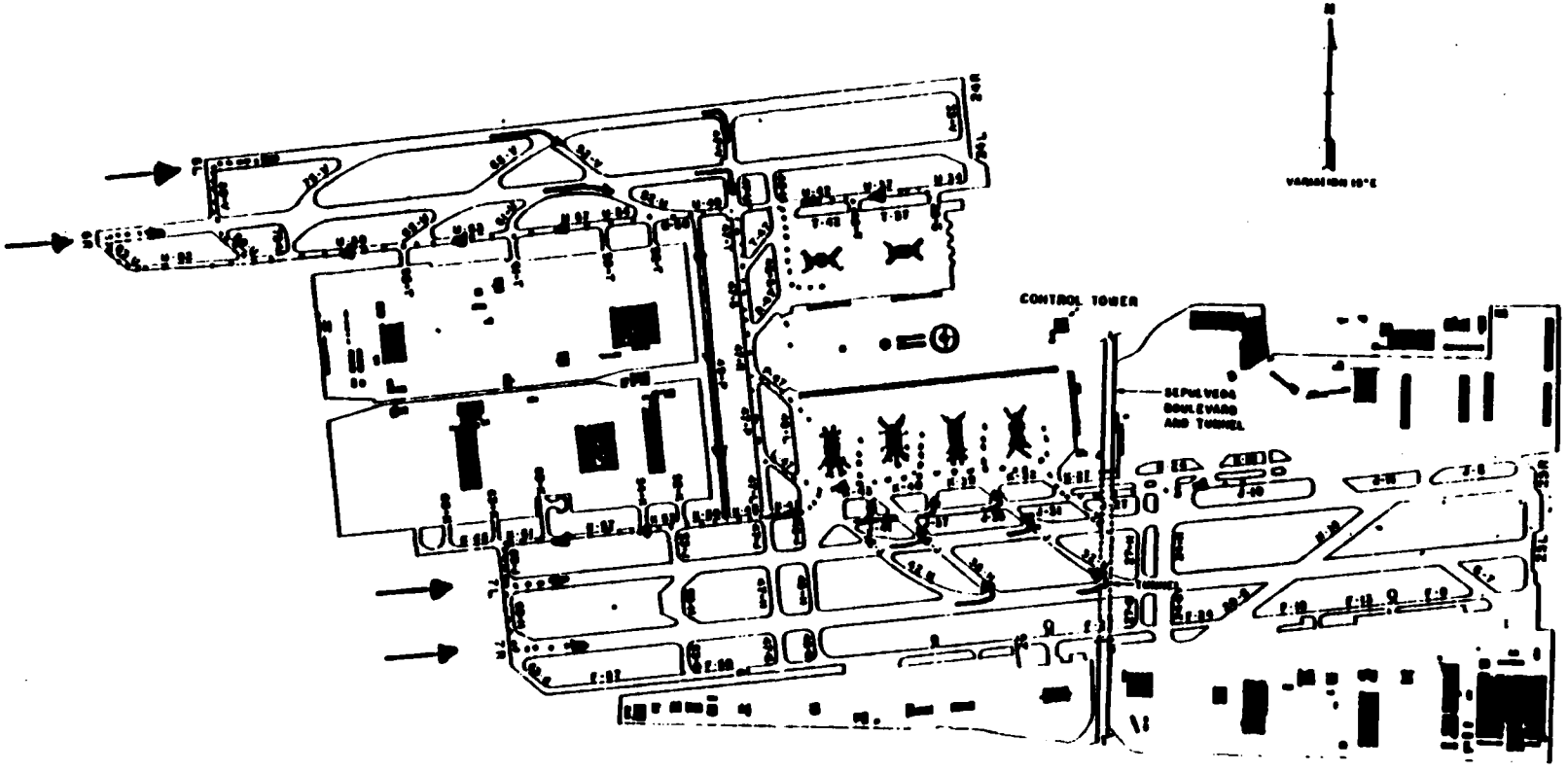
```
4       1       3
318   0.54    305   0.37    145   0.09
1       2       4
274   0.67    278   0.20    282   0.07    286   0.06
2       2       4
274   0.67    278   0.20    282   0.07    286   0.06
3       2       4
274   0.25    277   0.25    282   0.25    260   0.25
4       2       2
260   0.99    268   0.01
RWY EXIT DISTANCES
10
318   5630    305   7050    145   7490    274   4820    278   6650
282   7130    286   7400    277   6030    260   1970    268   3480
FIX TRAVEL TIMES-CONFIGURATION 'B'
4       2       1    25.5   204.0
4       2       2    25.5   191.3
4       2       3    25.5   180.0
4       2       4    25.5   180.0
3       2       1    25.5   191.3
3       2       2    25.5   191.3
3       2       3    25.5   191.3
3       2       4    25.5   180.0
2       2       1    28.5   180.0
2       2       2    28.5   180.0
2       2       3    28.5   180.0
2       2       4
```

1	2	1	36.0	196.4
1	2	2	36.0	180.0
1	2	3	36.0	180.0
1	2	4	-	-
5	2	1	-	-
5	2	2	18.0	180.0
5	2	3	18.0	180.0
5	2	4	18.0	180.0
6	2	1	-	-
6	2	2	-	-
6	2	3	18.0	180.0
6	2	4	-	-
4	1	1	24.0	192.0
4	1	2	24.0	192.0
4	1	3	24.0	180.0
4	1	4	24.0	180.0
3	1	1	22.5	192.9
3	1	2	22.5	192.9
3	1	3	22.5	180.0
3	1	4	-	-
2	1	1	-	-
2	1	2	-	-
2	1	3	31.5	180.0
2	1	4	-	-
1	1	1	33.0	180.0
1	1	2	33.0	180.0
1	1	3	-	-

1	1	4	-	-
5	1	1	-	-
5	1	2	22.5	192.9
5	1	3	22.5	180.0
5	1	4	-	-
8	1	1	-	-
8	1	2	-	-
8	1	3	18.0	180.0
8	1	4	18.0	180.0
4	4	1	24.0	192.0
4	4	2	24.0	192.0
4	4	3	24.0	192.0
4	4	4	24.0	180.0
3	4	1	-	-
3	4	2	21.0	210.0
3	4	3	21.0	180.0
3	4	4	-	-
2	4	1	-	-
2	4	2	36.0	180.0
2	4	3	36.0	180.0
2	4	4	-	-
1	4	1	-	-
1	4	2	34.5	197.1
1	4	3	34.5	180.0
1	4	4	-	-
5	4	1	-	-
5	4	2	18.0	180.0

5	4	3	18.0	180.0
5	4	4	-	-
6	4	1	-	-
6	4	2	18.0	180.0
6	4	3	-	-
6	4	4	-	-
4	3	1	24.0	192.0
4	3	2	24.0	192.0
4	3	3	24.0	180.0
4	3	4	24.0	180.0
3	3	1	18.0	180.0
3	3	2	18.0	180.0
3	3	3	18.0	180.0
3	3	4	18.0	180.0
2	3	1	-	-
2	3	2	-	-
2	3	3	18.0	180.0
2	3	4	-	-
1	3	1	-	-
1	3	2	31.5	180.0
1	3	3	31.5	180.0
1	3	4	-	-
5	3	1	-	-
5	3	2	21.0	180.0
5	3	3	-	-
5	3	4	-	-
6	3	1	-	-

6	3	2	-	-
6	3	3	18.0	180.0
6	3	4	18.0	180.0
7	3	1	-	-
7	3	2	18.0	180.0
7	3	3	-	-
7	3	4	18.0	180.0



Configuration C
Figure 9

01/11/79

RWY-NAMES

06R 06L 07R 07L

RWY END LINKS

151 323 810 822

TAXIWAY TWO-WAY

LOS ANGELES CONFIGURATION C

004

363 164 303 362

004

362 303 164 363

006

363 164 303 362 302 301

006

301 302 362 303 164 363

005

164 303 362 302 301

005

301 302 362 303 164

002

368 250

002

250 364

006

364 250 176 368 177 357

006

357 177 368 176 250 364

008

01/11/79

338 126 359 125 357 177 368 176
008
176 368 177 357 125 359 126 338
005
338 126 359 125 357
005
357 125 359 126 338
007
331 359 125 357 177 368 176
007
176 368 177 357 125 359 331
004
331 359 125 357
004
357 125 359 331
010
296 297 298 299 366 250 176 368 177 357
010
357 177 368 176 250 366 249 298 297 296
008
296 297 298 299 366 250 176 368
008
368 176 250 366 299 298 297 296
006
292 113 119 115 116 350
006
350 116 115 119 113 292

```
      805
      113     114     115     116     350
      805
      350     116     115     114     113
RUN XING LINKS
LAX CONFIGURATION (C)
      1       312
      1       307
      3       283
      3       265
      3       258
      4       258
      4       269
      4       272
      4       275
      4       284
RUN EXIT SELECTION
      1       1       3
    310     0.30     305     0.40     145     0.30
      2       1       3
    310     0.54     305     0.37     145     0.09
      3       1       3
    310     0.54     305     0.37     145     0.09
      4       1       3
    310     0.54     305     0.37     145     0.09
      1       2       2
    312     0.30     307     0.70
```

```
  2     2     2
312  0.54   307  0.46
  3     2     2
312  0.54   307  0.46
  4     2     2
312  0.54   307  0.46
  1     3     3
272  0.87   275  0.07   284  0.06
  2     3     3
272  0.87   275  0.07   284  0.06
  3     3     2
269  0.50   272  0.25   258  0.25
  4     3     2
258  0.99   266  0.01
  1     4     4
277  0.67   278  0.20   282  0.07   286  0.06
  2     4     4
277  0.67   278  0.20   282  0.07   286  0.06
  3     4     4
274  0.25   277  0.25   282  0.25   260  0.25
  4     4     2
260  0.99   268  0.01
BUX EXIT DISTANCES
018
310  5630   305  7050   145  7490   312  3840   307  5800
272  4580   275  7430   284  7300   269  4090   258  1970
277  6030   278  6650   282  7130   286  7400   274  4820
```

260 1970 268 3440 266 3440

FIX TRAVEL TIMES CONFIGURATION 1C1

4	1	1	24.0	192.0
4	1	2	24.0	192.0
4	1	3	24.0	180.0
4	1	4	24.0	180.0
3	1	1	22.5	192.9
3	1	2	22.5	192.9
3	1	3	22.5	180.0
3	1	4	-	-
2	1	1	-	-
2	1	2	-	-
2	1	3	31.5	180.0
2	1	4	-	-
1	1	1	33.0	180.0
1	1	2	33.0	180.0
1	1	3	-	-
1	1	4	-	-
5	1	1	-	-
5	1	2	22.5	192.9
5	1	3	22.5	180.0
5	1	4	-	-
8	1	1	-	-
8	1	2	-	-
8	1	3	18.0	180.0
8	1	4	18.0	180.0
4	2	1	24.0	192.0

4	2	2	24.0	192.0
4	2	3	24.0	192.0
4	2	4	24.0	180.0
3	2	1	-	-
3	2	2	21.0	210.0
3	2	3	21.0	180.0
3	2	4	-	-
2	2	1	-	-
2	2	2	36.0	180.0
2	2	3	36.0	180.0
2	2	4	-	-
1	2	1	-	-
1	2	2	34.5	197.1
1	2	3	34.5	180.0
1	2	4	-	-
5	2	1	-	-
5	2	2	16.0	180.0
5	2	3	16.0	180.0
5	2	4	-	-
6	2	1	-	-
6	2	2	16.0	180.0
6	2	3	-	-
6	2	4	-	-

Attachment C

INPUT DATA SUMMARY
STAGE 1 EXPERIMENTS

Los Angeles International Airport

Los Angeles
Airport Improvement Task Force Delay Studies

January 1979

LAX

INDEX OF STAGE 1 EXPERIMENTS

Table 2
LOS ANGELES DELAY EXPERIMENTS

Experiment number	Model	Study case[a]	Arrival runways	Departure runways	Weather	Demand	ATC System scenario[b]	Near Tearm[c] Improvements
Stage 1 Experiments								
1	ASM[d]	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1978	1978	None
2	ASM	2	24L, 24R, 25L, 25R	24L, 25R	IFR1	1978	1978	None
3	ASM	3	24R, 25L	24L, 25R	IFR2	1978	1978	None
4	ASM	5	6R, 7L	24L, 25R	VFR1	1978	1978	None
5	ASM	6	6R, 7L	24L, 25R	IFR1	1978	1978	None
6	ASM	4	6L, 6R, 7L, 7R	6L, 6R, 7L, 7R	VFR1	1978	1978	None
7	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1978	None
8	ASM	2	24L, 24R, 25L, 25R	24L, 25R	IFR1	1982	1978	None
9	ASM	4	6L, 6R, 7L, 7R	6L, 6R, 7L, 7R	VFR1	1982	1978	None
10	ASM	5	6R, 7L	24L, 25R	VFR1	1982	1978	None
10A	ASM	6	6R, 7L	24L, 25R	IFR1	1982	1978	None[e]
11	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1982	1982[e]
12	ASM	2	24L, 24R, 25L, 25R	24L, 25R	IFR1	1982	1982	1982
13	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1982	2, 3[f]
15	ASM	5	6R, 7L	24L, 25R	VFR1	1982	1978	5, 7[g] Change
16	ASM[h]	4	6L, 6R, 7L, 7R	6L, 6R, 7L, 7R	VFR1	1982	1978	5, 7, 8[g]
17	ADM[h]	n.a.	n.a.	n.a.	n.a.	1978	1978	None
17A	RCM[i]	7	24L, 24R, 25L	24L, 24R, 25L	VFR1	1982	1982	Tunnel Construction[j]
17B	RCM	7	24L, 24R, 25L, 25x[k]	24L, 24R, 25L, 25X	VFR1	1982	1982	Tunnel Construction
17C	RCM	7	24L, 24R, 25L, 26	24L, 24R, 25L, 26	VFR1	1982	1982	Comments-Usage for Light

n.a. = not applicable.

a. Study cases (combinations of runway use and weather conditions) are defined in Figure III-1.
b. FAA will describe impact of 1982 and post-1987 ATC systems on model inputs.
c. Potential near-term improvements are identified in the Los Angeles International Airport Improvement Task Force Interim Report, and in Appendix B.
d. Airfield Simulation Model.
e. Task Force establishes packages of near-term improvements most likely to be implemented in 1982 and 1987 time frames. The 1982 package includes improvement # 2 (high-speed taxiway off Runway 25L to the south), improvement # 3 (strengthening of the Sepulveda Tunnel), (cont.)

Table 2 (continued)

e. (cont.) new taxiway access to threshold of Runway 24R, and temporary holding areas on future Taxiway 75. The 1987 package includes all 1982 improvements plus Satellite 1, International Terminal, and/or remote parking for 20 aircraft at west end of airport. These packages of improvements are subject to Task Force review and revision.

f. Impact of absence of Improvements # 2 and #3 (high-speed taxiway of Runway 25L and strengthening of the Sepulveda Tunnel).

g. Improvement # 5 is a high-speed taxi exit off Runway 7. Improvement # 7 is a high-epped taxi exit to Taxiway 47 from Runway 6R. Improvement #8 is a bypass area on the north side of Runway 7L.

h. Annual Delay Model.

i. Runway Capacity Model.

j. Runway 25R closed for tunnel construction.

k. During closure of 25R for tunnel construction, parts of Runway 25 are open for small aircraft arrivals and departures.

LAX - STAGE 1

EXPERIMENT NO. 1

Objective:

To obtain baseline delay estimates for the following runway configuration in VFR-1 for 1978 demand.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Calibration was performed using this configuration ("A") (Inputs should be similar but with a 1978 demand).

Experiment 7 uses configuration "A" with 1982 demand.

Remaining Data Items:

- Time period to be simulated
- Demand input distributions (arrival fix, runways, and gates)
- Lateness distribution

Experiment Number: 1 (Input changes from experiment number CALIBRATION)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	Los Angeles Delay Exper. - Stage 1
2. Random number seeds	
3. Start and finish times	Required Data from Task Force
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	Required Data from Task Force
38. Demand	1978 Demand with Demand Input Distributions (Required Data from Task Force)

TABLE 3

% of Class 1: Arrival Fix/Runway Distribution

Runway (RWY)	Ontario (T)	Seal Beach (G)	Ventura (V)	Fillmore (F)	Van Nuys (VNY)	Northeast Quadrant (NE)	Southeast Quadrant (SE)	Northwest Quadrant (NW)	Southwest Quadrant (SW)
24R	36.8 (7)	5.3 (1)	5.3 (1)	52.6 (10)					
24L	53.8 (7)	7.7 (1)		38.5 (5)					
25R	100.0 (2)								
25L	89.3 (67)	10.7 (8)							

% of Class 2: Arrival Fix/Runway Distribution

Runway (RWY)	Ontario (T)	Seal Beach (G)	Ventura (V)	Fillmore (F)	Van Nuys (VNY)	Northeast Quadrant (NE)	Southeast Quadrant (SE)	Northwest Quadrant (NW)	Southwest Quadrant (SW)
24R	25.0 (6)	8.3 (2)	12.5 (3)	50.0 (12)	4.2 (1)				
24L	46.2 (6)	7.7 (1)		38.5 (5)	7.6 (1)				
25R	28.0 (63)	6.2 (14)	1.8 (4)	62.2 (140)	1.3 (3)	0.5 (1)			
25L	73.9 (128)	13.3 (23)		9.8 (17)	1.7 (3)		1.3 (2)		

Table 3 (continued)

% of Class 3: Arrival Fix/Runway Distribution

Runway (RWY)	Ontario (T)	Seal Beach (G)	Ventura (V)	Fillmore (F)	Van Nuys (VNY)	Northeast Quadrant (NE)	Southeast Quadrant (SE)	Northwest Quadrant (NW)	Southwest Quadrant (SW)
24R	28.1 (18)	21.9 (14)	32.8 (21)	12.5 (8)	3.0 2)	1.7 (1)			
24L	31.8 (7)	45.5 (10)	13.6 (3)		4.6 (1)	4.5 (1)			
25R	13.3 (2)	33.3 (5)	33.3 (5)	13.3 (2)	6.8 (1)				
25L	54.7 (23)	16.7 (7)	11.9 (5)	9.5 (4)		7.2 (3)			

% of Class 4: Arrival Fix/Runway Distribution

Runway (RWY)	Ontario (T)	Seal Beach (G)	Ventura (V)	Fillmore (F)	Van Nuys (VNY)	Northeast Quadrant (NE)	Southeast Quadrant (SE)	Northwest Quadrant (NW)	Southwest Quadrant (SW)
24R	33.3 (2)	33.3 (2)			33.4 (2)				
24L	50.0 (1)					50.0 (1)			
25R	100.0 (1)								
25L	33.3 (3)	44.5 (4)			11.1 (1)	11.1 (1)			

% of Class 1: Arrival and Departure
Runway/Gate Distributions

	Arrivals				Departures			
Rwy	24R	24L	25R	25L	24R	24L	25R	25L
Gate Area	(No.of Arcft)	( )	( )	( )	( )	( )	( )	( )
1	1.1 (1)							
2	7.4 (7)	2.1 (2)		9.6 (9)		19.2 (48)	0.4 (1)	
3	6.4 (6)	1.1 (1)				10.4 (26)		
4	1.1 (1)	3.2 (3)		16.0 (15)	0.8 (2)	21.6 (54)		0.4 (1)
5				6.4 (6)		8.4 (21)		
6	3.2 (3)			10.6 (10)	0.8 (2)	6.0 (15)		1.2 (3)
7	1.1 (1)		1.1 (1)	19.1 (18)		8.8 (22)		
8		1.1 (1)		9.5 (9)	0.8 (2)	17.2 (43)	0.4 (1)	
9								
10						2.4 (6)		
11						0.8 (2)		
12							0.4 (1)	
13								

% of Class 2: Arrival and Departure
Runway/Gate Distributions

	Arrivals				Departures			
Rwy	24R	24L	25R	25L	24R	24L	25R	25L
Gate Area	(No.of Acft	( )	( )	( )	( )	( )	( )	( )
1	0.2 (1)		0.9 (4)	3.2 (14)	0.2 (1)	0.2 (1)	0.2 (1)	
2	1.4 (6)		0.2 (1)	1.8 (8)		7.3 (41)	2.5 (14)	0.2 (1)
3						3.2 (18)	0.2 (1)	0.4 (2)
4			1.6 (7)	2.5 (11)		0.2 (1)	7.4 (42)	2.8 (16)
5	0.7 (3)		5.4 (24)	7.3 (32)		3.0 (17)	9.0 (51)	3.7 (21)
6	1.4 (6)		15.2 (67)	11.3 (50)	1.4 (8)	5.5 (31)	12.0 (68)	2.8 (16)
7	0.7 (3)		17.5 (77)	5.7 (25)	1.4 (8)	5.7 (32)	7.8 (44)	3.0 (17)
8	0.2 (1)		7.9 (35)	6.3 (28)		2.6 (15)	8.5 (48)	2.8 (16)
9	0.2 (1)			0.5 (2)			0.5 (3)	0.5 (3)
10			0.2 (1)	0.5 (2)		0.4 (2)		0.7 (4)
11	2.0 (9)	0.5 (2)	0.7 (3)	1.1 (5)	0.5 (3)	0.2 (1)		
12			0.7 (3)	2.2 (10)			1.9 (11)	1.1 (6)
13							0.2 (1)	

Table 4 (continued)

% of Class 3: Arrival and Departure Runway/Gate Distributions

	Arrivals				Departures			
Rwy	24R	24L	25R	25L	24R	24L	25R	25L
Gate Area	(No.of Acrft)	( )	( )	( )	( )	( )	( )	( )
1								
2					0.5 (1)			
3								
4			2.7 (4)	1.4 (2)		0.5 (1)		1.0 (2)
5				0.7 (1)	0.5 (1)		0.5 (1)	1.0 (2)
6			1.4 (2)	0.7 (1)			2.2 (4)	
7			1.4 (2)	1.4 (2)			0.5 (1)	
8					0.5 (1)	0.5 (1)		
9			2.0 (3)	18.3 (27)			10.3 (19)	18.9 (35)
10	0.7 (1)			3.4 (5)		0.5 (1)	0.5 (1)	1.0 (2)
11	51.0 (75)	13.5 (20)	0.7 (1)		16.2 (30)	10.8 (20)	19.5 (36)	14.1 (26)
12				0.7 (1)			0.5 (1)	
13								

Table 4 (continued)

% of Class 4: Arrival and Departure Runway/Gate Distributions

	Arrivals				Departures			
Rwy	24R	24L	25R	25L	24R	24L	25R	25L
Gate Area	(No.of Acrft)	( )	( )	( )	( )	( )	( )	( )
1								
2								
3								
4								
5								
6								
7								
8								
9			5.9 (1)	5.9 (1)	2.2 (1)	2.2 (1)		27.3 (12)
10	5.9 (1)				2.3 (1)	2.3 (1)	2.3 (1)	
11	64.7 (11)	17.6 (3)			22.7 (10)	18.2 (8)	6.8 (3)	11.4 (5)
12								2.3 (1)

Table 5

ARRIVAL AIRCRAFT LATENESS DISTRIBUTION
(Average deviation from schedule, excluding delays due to destination airport)

Amount of time late or early	Percent of flights late or early (%)
More than 15 min. early	0
less than 15 min. early	5
On time	24
less than 5 minutes late	29
5 to 10 minutes late	15
10 to 15 minutes late	9
15 to 30 minutes late	9
30 to 45 minutes late	4
45 to 60 minutes late	2
more than 60 minutes late	3

Source: Peat, Marwick, Mitchell & Co., analysis of data provided by Stapleton Task Force

LAX - STAGE 1

EXPERIMENT NO. 7

Objective:

To obtain baseline delay estimates for the following runway configurations in VFR 1 for 1982 demand.

To obtain delay estimates for 1982 with no improvements to the airport.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Experiment 11 is similar with an improved ATC system scenario (1982) and the 1982 near-term improvements.

Prior Experiment 1 is similar for the 1978 demand.

Remaining Data Items:

- Demand input distributions
- Lateness distribution

Experiment Number: 7 (Input changes from experiment number 1)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	1982 Demand with Demand Input Distributions (Required from Task Force

LAX - STAGE 1

EXPERIMENT NO. 11

Objective:

To assess delays to aircraft in 1982 for the following runway configuration in VFR 1 with an improved ATC system scenario and the 1982 near-term improvements.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Experiment 13 is identical less improvements #2 (high-speed taxiway off runway 25L) and improvements #3 (strengthening of the Sepulverda tunnel).

Prior Experiment 7 is similar without the noted improvements.

Prior Experiment 1 is similar without the noted improvements and a 1978 demand.

Remaining Data Items:

- 1982 near-term improvements
- 1982 demand input distributions

Experiment Number: 11 (Input changes from experiment number 50 7)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	See Attached Figure for Access to 24R
13. Runway crossing links	
14. Exit taxiway location	See attached Figure for Improvement # 2
15. Holding areas	See attached figure for Improvement to Taxiway T3
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	New route data to reflect improvements
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	New Exit Class 4 Rwy 4 Prob. of use 0.28
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	

TABLE 6
PRE-1985 VFR SEPARATION VALUES*

A. Arrival-Arrival Separation (nmi) - VFR - Without Buffer

		Trail Aircraft Class			
		A	B	C	D
Lead Aircraft Class	A	1.9	1.9	1.9	1.9
	B	1.9	1.9	1.9	1.9
	C	2.7	2.7	1.9	1.9
	D	4.0	4.0	3.0	2.7

B. Departure-Departure Separations (seconds) - VFR

		Trail Aircraft Class			
		A	B	C	D
Lead Aircraft Class	A	35	35	45	50
	B	35	35	45	50
	C	50	50	60	60
	D	120	120	120	90

* The separations shown are minimum values.

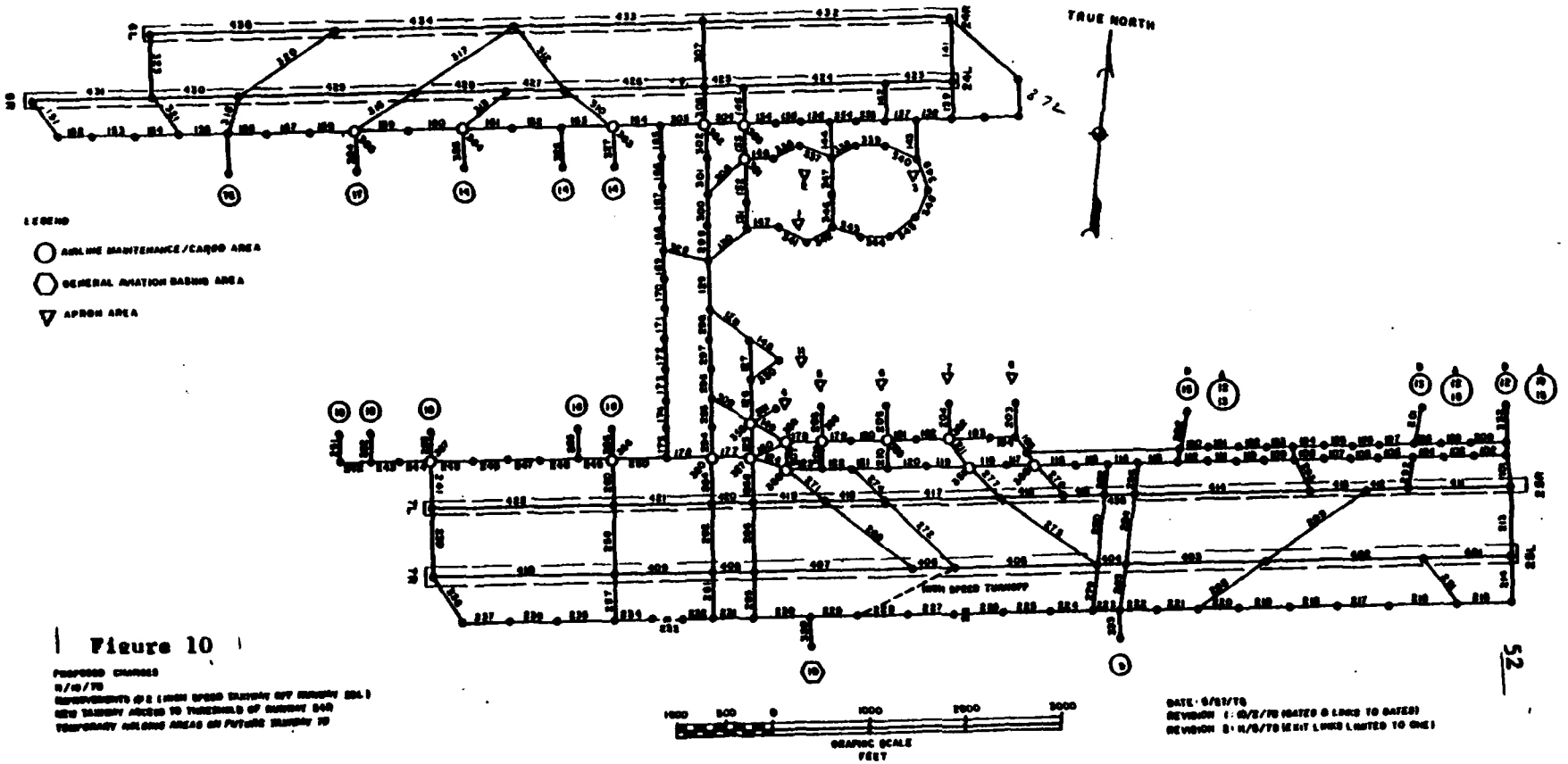


Figure 10

PROPOSED CHANGES
9/20/72

DATE: 9/21/72
REVISION 1: 10/2/72 (GATES 8 LOCS TO GATES)
REVISION 2: 11/6/72 (EXIT LINES LIMITED TO ONE)

LAX - STAGE 13

EXPERIMENT NO. 13

Objective:

To assess the delay impact to aircraft in 1982 for the following runway configuration in VFR 1 with an improved ATC system scenario and the 1982 near-term improvement less improvement #2 and #3.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Prior Experiment 11 is similar except improvements #2 and #3 are included in run.

Remaining Data Items:

None

Experiment Number: 13 (Input changes from experiment number 54 11

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	Less Improvement #2 and # 3
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	Less Improvement Exit
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	Restrict Heavy Aircraft (Class 1) to Runways 24R and 24L (noise restriction on 24L)

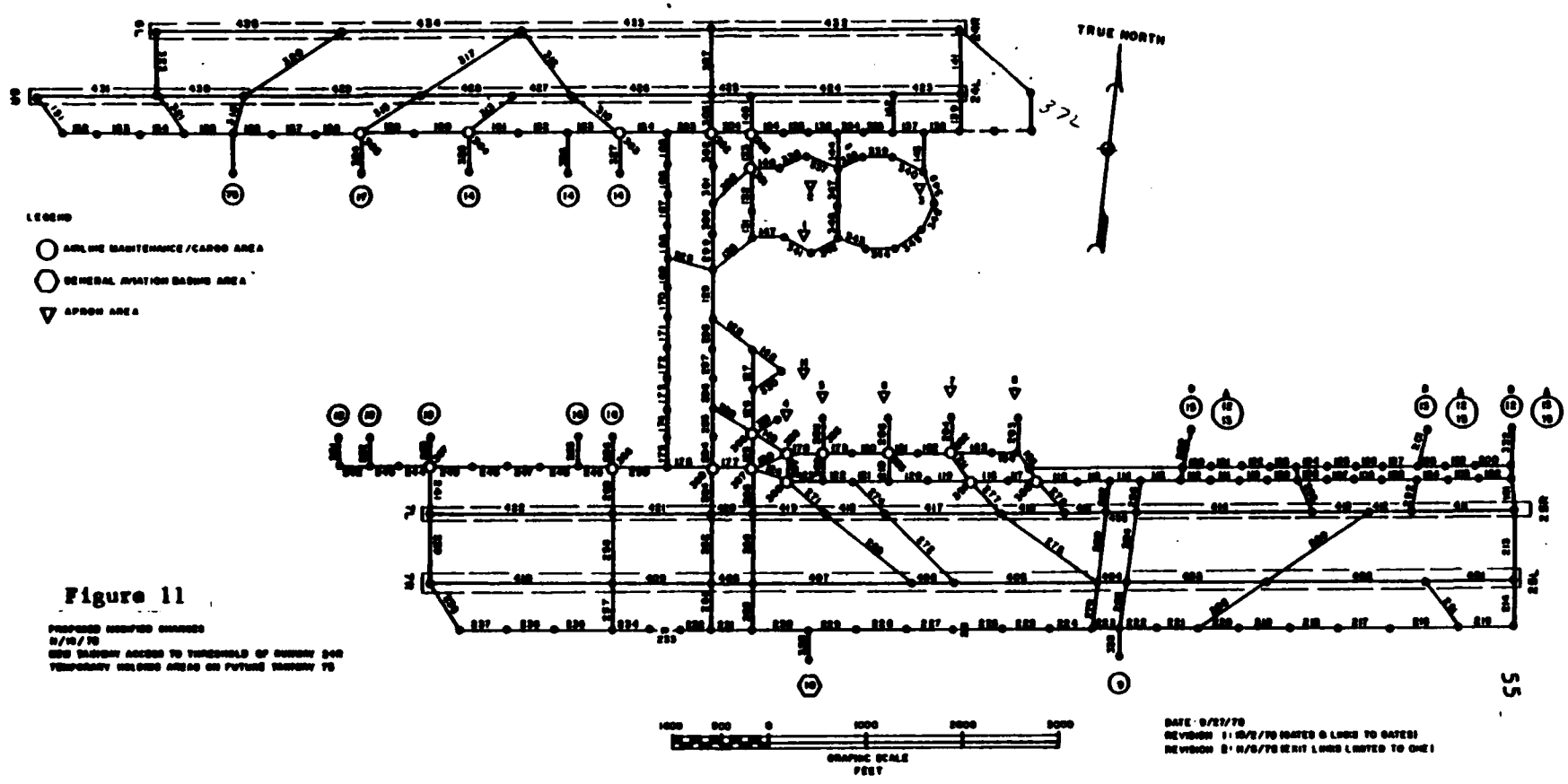


Figure 11

PROPOSED RUNWAYS CHANGES
8/10/78
SEE TAXIWAY ACCESS TO THRESHOLD OF RUNWAY 24R
TEMPORARY HOLDING AREAS ON FUTURE RUNWAY 7R

DATE: 9/27/78
REVISION 1: 10/2/78 GATES 8 LINES TO GATES1
REVISION 2: 11/8/78 EXIT LINES LIMITED TO ONE!

LAX - STAGE 1

EXPERIMENT NO. 2

Objective:

To obtain baseline delay estimates for the following runway configuration in IFR 1 for 1978 demand.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24L, 25R

Related Comparison Experiments:

Experiment 8 is identical except for a 1982 demand. Experiment 3 is similar with IFR 2 weather conditions and restriction on arrival runway use.

Remaining Data Items:

- IFR 1 values for arrival runway occupancy times and new lateness distributions
- Demand input distributions for departure runways and gates

Experiment Number: 2 (Input changes from experiment number 1)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	No Departures on 24R and 25L
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	IFR 1 Weather Conditions
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	IFR 1 Values
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	Shift Departure demand from 24R to 24L and 25 L to 25R

Table 7

C. ATC PROCEDURES

18. Aircraft Separations: These values are based on Report No. FAA-EM-78-8A.

Arrival-Arrival Separation (nmi) - IFR - Without Buffer

		Trail Aircraft Class			
		4 (A)	3 (B)	2 (C)	1 (D)
Lead Aircraft Class	4 (A)	3.0	3.0	3.0	3.0
	3 (B)	3.0	3.0	3.0	3.0
	2 (C)	4.0	3.0*	3.0	3.0
	1 (D)	6.0	5.0*	5.0	4.0

Departure-Departure Separations (seconds) - IFR

		Trail Aircraft Class			
		4 (A)	3 (B)	2 (C)	1 (D)
Lead Aircraft Class	4 (A)	60	60	60	60
	3 (B)	60	60	60	60
	2 (C)	60	60	60	60
	1 (D)	120	120	120	90

*The separations shown are minimum values.

Departure/Arrival separations assume VFR values + 0.5 nmi. Arrival/Departure separations assume IFR runway occupancy time equals VFR runway occupancy time + 5 seconds.

LAX - STAGE 1

EXPERIMENT NO. 8

Objective:

To obtain baseline delay estimates for the following runway configurations in IFR 1 for 1982 demand.

To obtain delay estimates for 1982 with no improvements to the airport.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24L, 25R

Related Comparison Experiments:

Experiment 12 is identical but with an improved ATC system scenario and the 1982 near-term improvements.

Prior Experiment #2 is identical except for a 1978 demand.

Remaining Data Items:

- 1982 demand input distributions (arrival fix, runways, and gates)

Experiment Number: 8 (Input changes from experiment number 60 2)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	1982 Demand with Arrival Fix and Runway Distributions (Required from Task Force)

LAX - STAGE 1

EXPERIMENT NO. 12

Objective:

To assess delays to aircraft in 1982 for the following runway configuration in IFR 1 with an improved ATC system scenario and the 1982 near-term improvements.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24L, 25R

Related Comparison Experiments:

Prior Experiment #8 is similar except for the noted improvements.

Remaining Data Items:

- Arrival demand distributions for heavys (arrival fix, runways, and gates)

Experiment Number: 12 (Input changes from experiment number 8)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	See Attached Figure for Access to 24R
13. Runway crossing links	
14. Exit taxiway location	See Attached Figure for Improvement # 2
15. Holding areas	See Attached Figure for Improvement to Taxiway (TS)
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	New Route Data to Reflect Improvements
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	New Exit Class 4 Rwy 4 Prob. of use 0.28
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	Demand Distribution for Heavy Aircraft Shared by 25L and 25R

LAX - STAGE 1

EXPERIMENT NO. 3

Objective:

To obtain baseline delay estimates for the following runway configuration in IFR 2 with 1978 demand.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 25L	24L, 25R

Related Comparison Experiments:

Prior Experiment 2 is similar except for IFR 1 conditions.

Remaining Data Items:

- IFR 2 separation values and lateness distributions
- Arrival demand distributions
- IFR 2 arrival runway occupancy times

Experiment Number: 3 (Input changes from experiment number 2)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	IFR 2 Weather Conditions (special missed approach procedure)
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	IFR 2 Values if different
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	IFR 2 Values if Different
38. Demand	No Arrivals on 24L and 25R (Shift Arrival Demand)

LAX - STAGE 1

EXPERIMENT NO. 4

Objective:

To obtain baseline delay estimates for the following runway configuration in VFR 1 for 1978 demand for nighttime operations.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
6R, 7L	24L, 25R

Related Comparison Experiments:

Experiment 5 is identical except for IFR 1 weather conditions.

Experiment 10 is identical except for 1982 demand.

Remaining Data Items:

- New model inputs (See configuration B)
- Demand input distributions
- Time of simulation (0000 (a.m.) to 0600 (a.m.))
  (0500 G.m.t. to 1100 G.m.t.)
- VFR 1 (special) separations for departure/arrival dependency on 6R-24L, 7L-25R

Experiment Number: 4 (Input changes from experiment number 67 New)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "B"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	VFR1 (Special)
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	New Data from night time data collection
29. Arrival runway occupancy times	New Data from night time data collection
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	1978

EXIT TAXIWAY UTILIZATION: Table 9

RUNWAY 7L

OBSERVED PROBABILITY OF USE
(NUMBER OF AIRCRAFT)
AVERAGE RUNWAY OCCUPANCY (SEC)

CLASS	EXIT LINK NO. 274	277	278	282	260	286
1 (D)						
2 (C)	0.67 (10) 60		0.20 (3) 66	0.07 (1) 76		0.06 (1) 76
3 (B)	0.25 (1) 64	0.25 (1) 63		0.25 (1) 139	0.25 (1) 42	
4 (A)					1.00 (1) 42	

RUNWAY 6R

OBSERVED PROBABILITY OF USE
(NUMBER OF AIRCRAFT)
AVERAGE RUNWAY OCCUPANCY (SEC)

CLASS	EXIT LINK NO. 310	305	145			
1 (D)	.30 (3) 47	.40 (4) 70	.30 (3) 70			
2 (C)	.54 (13) 48	.37 (9) 61	.09 (2) 75			
3 (B)						
4 (A)						

LAX - STAGE 1

EXPERIMENT NO. 10

Objective:

To obtain baseline delay estimates for the following runway configurations in VFR 1 for 1982 demand.

To obtain delay estimates for 1982 with no improvements to the airport.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
6R, 7L	24L, 25R

Related Comparison Experiments:

Experiment 10A is identical except for IFR 1 weather conditions.

Experiment 15 is identical except for near-term improvements #5 and #7.

Prior Experiment 4 is identical except for 1978 demand.

Remaining Data Items:

- Demand input distributions

Experiment Number: 10 (Input changes from experiment number 4)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "B"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	1982 Demand

LAX - STAGE 1

EXPERIMENT NO. 15

Objective:

To assess delays to aircraft in 1982 for the following runway configuration in VFR 1 with an improved 1978 ATC system scenario and near-term improvements #5 and #7 for nighttime operations.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
6R, 7L	24L, 25R

Related Comparison Experiments:

Prior Experiment 10 is similar without the noted improvements.

Remaining Data Items:

- Bypass area north of runway 7L Improvement #8 omitted from this experiment. (Must be defined by Task Force)

New Exit Probabilities

Runway 6R (Combining link exits 310 & 305)	Runway 7R
Class 1 - 0.70	Class 1 - 0.87
Class 2 - 0.99	Class 2 - 0.87
Class 3 - 0.99	Class 3 - 0.50
Class 4 - 0.99	Class 4 - 0.50

Experiment Number: 15 (Input changes from experiment number 10)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "B"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	New Routes for Improvement #5 & #7
14. Exit taxiway location	New Exit for Improvements # 5, & #7
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	New Values for Exit Utilization
29. Arrival runway occupancy times	New Exit
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	

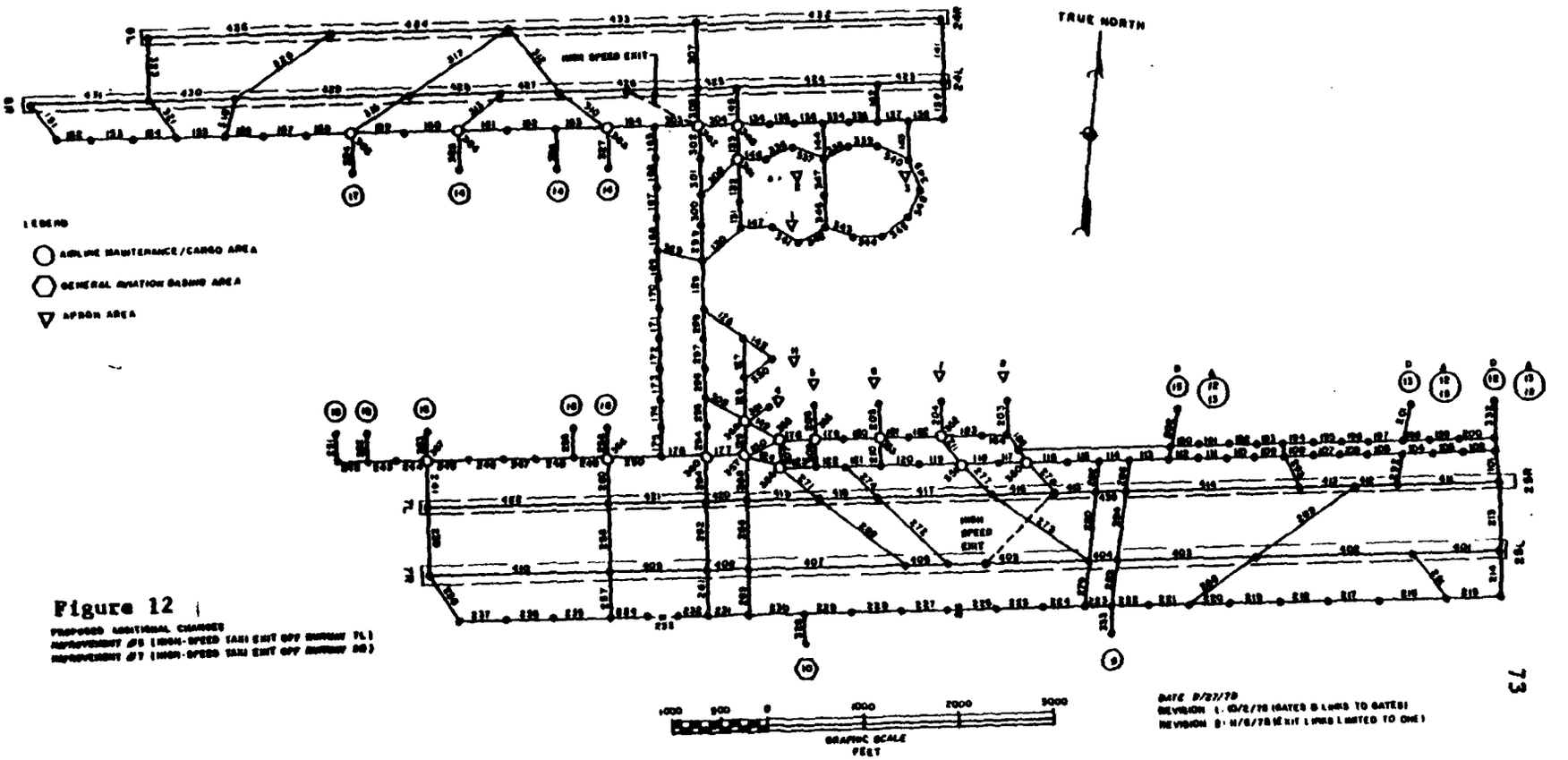


Figure 12

PROPOSED ADDITIONAL CHANGES
IMPROVEMENT #6 (HIGH-SPEED TAXI EXIT OFF RUNWAY 7L)
IMPROVEMENT #7 (HIGH-SPEED TAXI EXIT OFF RUNWAY 9R)

LAX - STAGE 1

EXPERIMENT NO. 5

Objective:

To obtain baseline delay estimates for the following runway configuration in IFR1 for 1978 demand.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
6R, 7L	24L, 25R

Related Comparison Experiments:

Experiment # 10A is identical except for the 1982 demand.

Remaining Data Items:

- Demand Input Distributions
- IFR 1 Separations

Experiment Number: 5 (Input changes from experiment number 4)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "B"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	IFR 1 (Special)departure/arrival depen-
19. Route data	dency to be developed
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	

LAX - STAGE 1

EXPERIMENT NO. 10A

Objective:

To obtain baseline delay estimates for the following runway configuration in IFR 1 for 1982 demand.

To obtain delay estimates for 1982 with no improvements to the airport.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
6R, 7L	24L, 25R

Related Comparison Experiments:

Prior Experiment 5 is similar with a 1978 demand.

Remaining Data Items:

- 1982 Demand
- Demand input distribution

Experiment Number: 10A (Input changes from experiment number 5)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "B"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	1982

LAX - STAGE 1

EXPERIMENT NO. 6

Objective:

To obtain baseline delay estimates for the following runway configuration in VFR 1 for 1978 demand for east operations.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
6R, 6L, 7R, 7L	6R, 6L, 7R, 7L

Related Comparison Experiments:

Experiment #9 is identical except for the 1982 demand.

Remaining Data Items:

- New model inputs (See configuration C)
- Demand input distributions
- Time of simulation

Experiment Number: 6 (Input changes from experiment number 79 (New))

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	Required from Task Force
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "C"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	1978 Demand and Demand Input Distributions (Required from Task Force)

LAX - STAGE 1

EXPERIMENT NO. 9

Objective:

To obtain baseline delay estimates for the following runway configurations in VFR 1 for 1982 demand for east operations.

To obtain delay estimates for 1982 with no improvements to the airport for east operations.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
6R, 6L, 7R, 7L	6R, 6L, 7R, 7L

Related Comparison Experiments:

Experiment #16 is identical except for near-term improvements #5, #7, and #8.

Prior Experiment #6 is similar with a 1978 demand.

Remaining Data Items:

- New model inputs (See configuration C)

Experiment Number: 9 (Input changes from experiment number 6)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "C"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	1982 Demand and Demand Input Distributions (Required from Task Force)

LAX - STAGE 1

EXPERIMENT NO. 16

Objective:

To assess delays to aircraft in two of the following runway configurations in VFR 1 with near-term improvements #5, #7, and #8 for east operations.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
6R, 6L, 7R, 7L	6R, 6L, 7R, 7L

Related Comparison Experiments:

Prior Experiment #9 is identical except for noted improvements to the airport.

Remaining Data Items:

. By pass area on Runway 7L
  Must be defined by Task Force

Experiment Number: 16 (Input changes from experiment number 83 (9)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "C"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	New Routes for 7L
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	

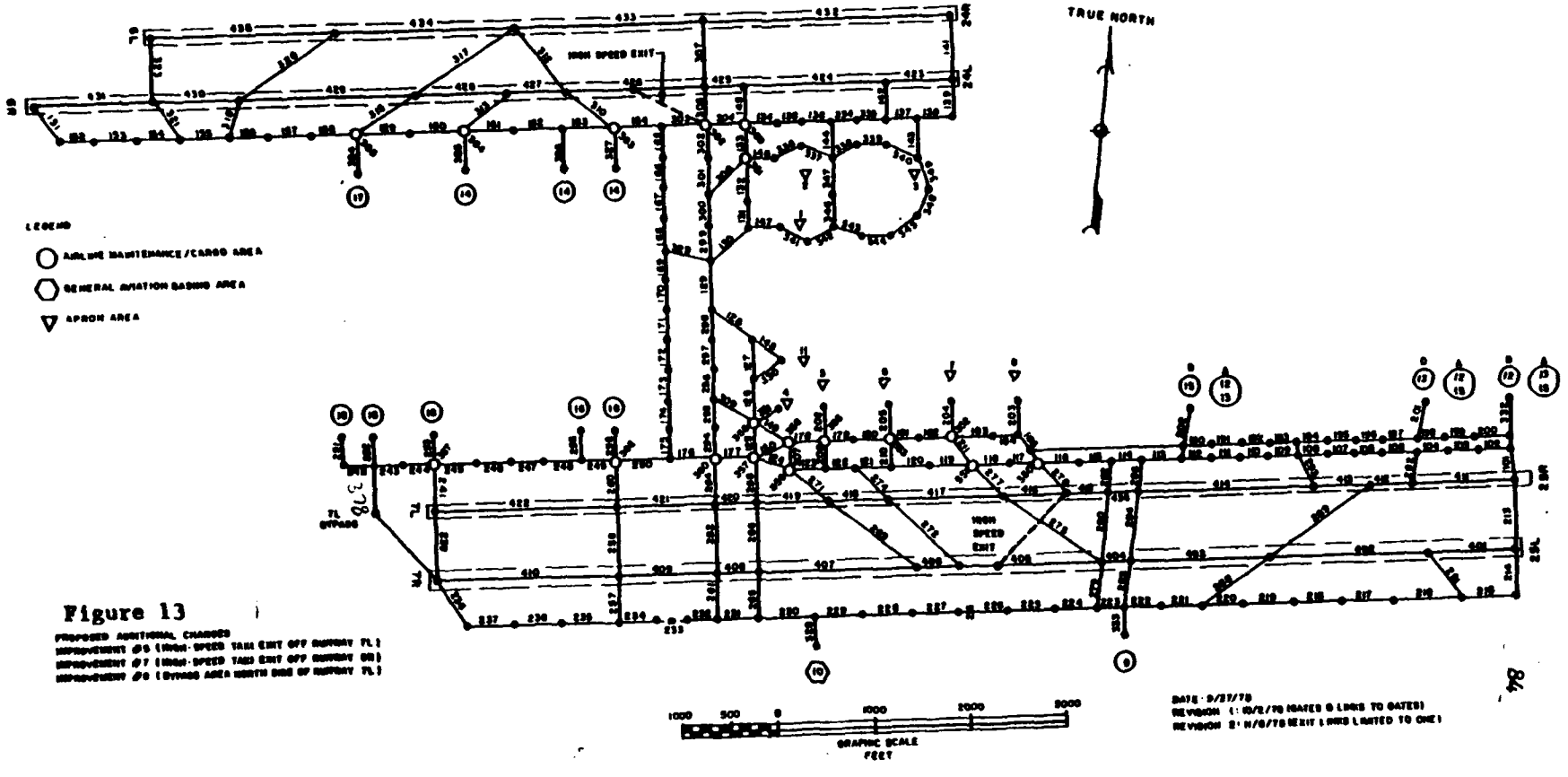


Figure 13

PROPOSED ADDITIONAL CHANGES
IMPROVEMENT #6 (HIGH-SPEED TAXI EXIT OFF RUNWAY 7L)
IMPROVEMENT #7 (HIGH-SPEED TAXI EXIT OFF RUNWAY 9R)
IMPROVEMENT #8 (BYPASS AREA NORTH SIDE OF RUNWAY 7L)

DATE: 9/27/78
REVISION 1: 10/2/78 (GATES 8 LINKS TO GATES)
REVISION 2: 11/6/78 (EXIT LINES LIMITED TO ONE)

Attachment D

PRELIMINARY MODEL INPUT DATA FOR STAGE 2 EXPERIMENTS

Los Angeles International Airport

Los Angeles
Airport Improvement Task Force Delay Studies

January 1979

Table 10
LOS ANGELES DELAY EXPERIMENTS

Experiment number	Model	Study case[a]	Arrival Runways	Departure Runways	Weather	Demand	ATC System scenario[b]	Near-term improvements[c]
Stage 2 Experiments								
18	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1982	10[l]
19	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1982	11[m]
20	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1982	Terminal Expansion[n]
21	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1982	Remote Terminal[o]
22	ASM	7	24L, 24R, 25L	24L, 24R, 25L	VFR1	1978	1978	Tunnel Construction[p]
22A	ASM	8	24L, 24R, 25L	24L, 24R, 25L	VFR1	1982	1978	Dual Taxiway[p]
23	ASM	8	24R, 25L	24L, 25L	IFR1	1978	1978	Tunnel Construction 25R
24	ASM	9	24R, 25R	24L, 25R	IFR1	1978	1978	Tunnel Construction 25L
25	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1987	1987	1987[e]
26	ASM	2	24L, 24R, 25L, 25R	24L, 25R	IFR1	1987	1987	1987 + Change
27	ADM	n.a.	n.a.	n.a.	n.a	1982	1982	1982
28	ADM	n.a.	n.a.	n.a.	n.a.	1982	1982	None
29	ADM	n.a.	n.a.	n.a.	n.a.	1982	1978	1982
30	ADM	n.a.	n.a.	n.a.	n.a.	1982	1978	None
31	ADM	n.a.	n.a.	n.a.	n.a.	1987	1987	1987
32	ADM	n.a.	n.a.	n.a.	n.a.	1987	1987	None
33	ADM	n.a.	n.a.	n.a.	n.a.	1987	1978	1987
34	ADM	n.a.	n.a.	n.a.	n.a.	1987	1988	None

l. Improvement #10 consists of a series of taxiway improvements identified in Appendix B.

m. Improvement #11 contains temporary holding areas on present Taxiway 47 west of Satellites 3 and 4. The need for this experiment will be reviewed by the Task Force after consideration of temporary holding areas on future Taxiway 75.

n. Construction of Satellite 1 and International Terminal. The need for this experiment will be reviewed by the Task Force after consideration of future airline terminal locations.

o. Remote parking for 20 aircraft at west end of Airport.

p. Additional experiment may be needed to test value of dual taxiway system around Satellite 4 during tunnel construction

LAX

INDEX OF STAGE 2 EXPERIMENTS

LAX - STAGE 2

EXPERIMENT NO. 18

Objective:

To assess delays to aircraft in 1982 for the following runway configuration in VFR 1 with an improved ATC system scenario and improvement #10 (taxiways).

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Experiment #19 is identical except for improvement #11 (temporary holding areas on taxiway 47 west of satellites 3 and 4).

Prior Experiment #11 is identical except for improvement #10 (taxiway improvements).

Remaining Data Items:

- New route structure

Experiment Number: 18 (Input changes from experiment number 11)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	New routes
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	

LAX - STAGE 2

EXPERIMENT NO. 19

Objective:

To assess delays to aircraft in 1982 for the following runway configuration in VFR 1 with an improved ATC system scenario and improvement #11 (temporary holding areas on taxiway 47).

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Experiment #20 is identical except for terminal expansion. (Construction of satellite 1 and international terminal)

Prior Experiment #18 is identical except for improvement #11 (temporary holding areas on taxiway 47 west of satellites 3 and 4).

Remaining Data Items:

- New holding area
  (on present taxiway 47 west of satellites 3 and 4)

Experiment Number: 19 (Input changes from experiment number 18)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	New holding area
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	

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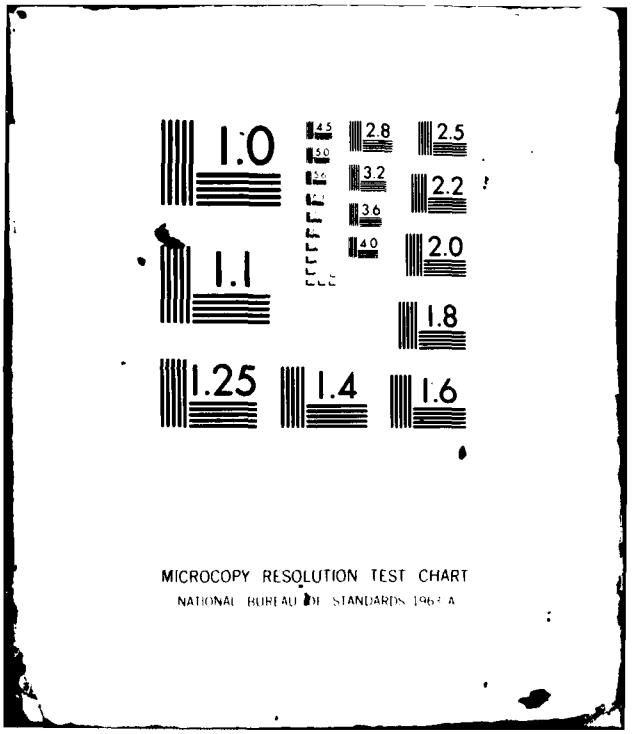
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LAX - STAGE 2

EXPERIMENT NO. 20

Objective:

To assess delays to aircraft in 1982 for the following runway configuration in VFR 1 with an improved ATC system scenario and terminal expansion.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Experiment #21 is identical except for remote parking for 20 aircraft at west end of airport.

Prior Experiment #19 is identical except for terminal expansion.

Remaining Data Items:

- New demand distributions (Gate area assignments)
- New route structure

Experiment Number: 20 (Input changes from experiment number 19)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	New routes
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	New demand distribution

LAX - STAGE 2

EXPERIMENT NO. 21

Objective:

To assess delays to aircraft in 1982 for the following runway configuration in VFR 1 with an improved ATC system scenario and remote parking for 20 aircraft.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Prior Experiment #20 is identical except for remote parking for 20 aircraft at west end of airport.

Remaining Data Items:

- New route structure (Gate area assignments)
- New demand distribution

Experiment Number: 21 (Input changes from experiment number 20)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	New routes to gate area
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35 Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	New demand distribution

LAX - STAGE 2

EXPERIMENT NO. 25

Objective:

To assess delays to aircraft in 1987 for the following runway configuration in VFR 1 with an improved 1987 ATC system scenario and 1982 improvements plus the satellite terminal and/or remote parking for 20 aircraft.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Prior Experiment #11 is identical except for the improvements from 1982 to 1987 and the demand.

Remaining Data Items:

- Demand distributions

Experiment Number: 25 (Input changes from experiment number 96 11)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	1987 Demand

LAX - STAGE 2

EXPERIMENT NO. 26

Objective:

To assess delays to aircraft in 1987 for the following runway configuration in IFR 1 with an improved 1987 ATC system scenario and 1982 improvements plus the satellite terminal and/or remote parking for 20 aircraft.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24L, 25R

Related Comparison Experiments:

Prior Experiment #12 is identical except for the improvements from 1982 to 1987 and the demand.

Remaining Data Items:

- Demand distributions

Experiment Number: 26 (Input changes from experiment number 12)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	1987 Demand

LAX - STAGE 2

EXPERIMENT NO. 22

Objective:

To assess the delay impact to aircraft in 1978 for the following runway configuration in VFR 1 due to the runway closure of 25R during work on the Spulveda Tunnel.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25L	24R, 24L, 25L

Related Comparison Experiments:

Prior Experiment #1 is identical except for closure of 25R for tunnel construction.

Remaining Data Items:

Experiment Number: 22 (Input changes from experiment number 100 1)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10. Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	Reassign arrivals and departures from 25R to 25L

LAX - STAGE 2

EXPERIMENT NO. 22A

Objective:

To assess the delay impact to aircraft in 1982 for the following runway configuration in VFR 1 due to the runway closure of 25R during work on the Sepulveda Tunnel with a dual taxiway system around satellite 4.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24L, 24R, 25L	24L, 24R, 25L

Related Comparison Experiments:

Prior Experiment #22 is identical except for a dual taxiway system and a 1982 *demand*.

Remaining Data Items:

Experiment Number: 22A (Input changes from experiment number 22)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	New route structure
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	Reassign arrivals and departures from 25R to 25L (1982 Demand)

LAX - STAGE 2

EXPERIMENT NO. 23

Objective:

To assess the delay impact to aircraft in 1978 for the following runway configuration in IFR 1 due to the runway closure of 25R during work on the Sepulveda Tunnel.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 25L	24L, 25L

Related Comparison Experiments:

Prior experiment #2 is identical except for the closure of runway 25R.

Remaining Data Items:

Experiment Number: 23 (Input changes from experiment number 2)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	New departure routes to 25R for Class A
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	Reassign arrival and departures from 25R to 25L

LAX - STAGE 2

EXPERIMENT NO. 24

Objective:

To assess the delay impact to aircraft in 1978 for the following runway configuration in IFR 1 due to the runway closure of 25L during work on the Sepulveda Tunnel (in 79).

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 25R	24L, 25R

Related Comparison Experiments:

Prior Experiment #2 is identical except for the closure of runway 25L for tunnel construction.

Remaining Data Items:

Experiment Number: 24 (Input changes from experiment number 2)

SIMULATION MODEL INPUT	DESCRIPTION OF INPUT CHANGE
A. Logistics	
1. Title	
2. Random number seeds	
3. Start and finish times	
4. Print options	
5. Airline names	
6. Processing options	
7. Truncation limits	
8. Time switch	
B. Airfield Physical Characteristics	Configuration "A"
9. Airfield network	
10 Number of runways	
11. Runway identification	
12. Departure runway and links	
13. Runway crossing links	
14. Exit taxiway location	
15. Holding areas	
16. Airline gates	
17. General aviation basing areas	
C. ATC Procedures	
18. Aircraft separation	
19. Route data	
20. Two-way path data	
21. Common approach paths	
22. Vectoring delays	
23. Departing runway queue control	
24. Gate hold control	
25. Departure airspace constraints	
26. Departure queue	
27. Runway crossing delay control	
D. Aircraft Operational Characteristics	
28. Exit taxiway utilization	
29. Arrival runway occupancy times	
30. Touch-and-go runway occupancy times	
31. Departure runway occupancy times	
32. Taxi speeds	
33. Approach speeds	
34. Gate service times	
35. Airspace travel times	
36. Runway crossing times	
37. Lateness distributions	
38. Demand	Reassign arrival and departures from 25L to 25R